

INDUSTRIAL-ARTS MAGAZINE

Vol. III

MAY, 1915

No. 5

A BETTER MAN AND A BETTER JOB

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WITHIN a year I have heard four eminent college presidents discuss what is to me, at least, the rather time-worn topic of "Cultural versus Vocational Training."

The first claimed that vocational studies in our schools would be a menace to furthering the liberal arts. The second announced that statesmen are more needed today than carpenters. The third, with that vigor displayed by the peace advocate when he said that he would have peace if he had to fight for it, stated that classical education must be retained even tho the people would not have it; while the fourth conceded the need of vocational training but he would limit its field of usefulness to those who could not hold to the pace of the scholarly elect.

I suspect that most of the arguments were simply playing to the galleries. Usually one needs only a voice filled with quaver and a few contrasted phrases such as "We need men, not mechanics"; "We must make lives, not livelihoods"; "It is the man we must think of and not the job."

Neither is it difficult, tho not quite so eloquent, for the complacent captain of industry to argue for the necessity of practical education and to urge upon us the adoption of the German system without even scratching off the label. It is still easier, if one has the power of expression, to announce in a muck-raking fashion that the schools are a failure; that they are stupid in method, impractical in plan and absolutely ineffective in results. It is likewise easy to turn the muck and spread its odors by saying that the whole elementary school is keyed absolutely, and conducted solely for the preparation for and graduation from the high school and that only seven out of every hundred of the pupils that begin in the elementary school enter the high school, and to repeat that fewer than five out of every hundred high school scholars ever go to college.

This controversy over educational values appears to be very exciting and very recent, but after all, like many things, it is an old subject revived. Years ago the son of Sirach stated: "The wisdom of a scribe cometh by his time of leisure and he that is less in action shall receive wisdom," and in the next breath he asks—with what wisdom shall he be furnished that holdeth the plow, and that glorieth in the goad, that driveth oxen * * * and whose whole talk is about the offspring of bulls?" The son of Sirach answered his own question—"He

shall give his mind to turn up furrows, and his care is to give kine fodder."

I fear that this pedagogical wisdom has been misinterpreted with the result that there has been considerable snobbery in education. We have inferred that the education of a gentleman was to come by opportunity of leisure and that somehow those who had nothing to do with the job became exceeding wise, while the rest of mankind was told to put their trust in their hands and become wise in their own work with the result that one portion of the race had done all the thinking, or at least, wanted to do all of it, and to the other portion was delegated all the working. Few of us have wanted a job. Most of us have wanted a situation with the emphasis on the "sit."

The college president who stated that we needed statesmen more than we needed mechanics expressed in another way the old idea that we needed gentlemen more than we needed workers. The captain of industry, on the other hand, believes that the world will be saved thru more mechanics. But is it not true that the problems facing our democracy require more than the exercise of statesmanship on the part of the few and more than the possession of mechanical skill by the many, and in general, were not these college presidents on the wrong track in differentiating the educational practice into the two divisions of training thinkers or training workers? Is it not rather the training of thinkers and workers? No longer is it "Cultural versus Technical Training." It is "Liberal and Vocational Training." It is no longer "Wisdom thru Leisure." It is "Knowledge thru Work." The success of that democracy which we see on the horizon will come only out of a wise leadership and a loyal supportership and not from selfish leaders and blind followers. The world has need for a statesmanship which leads by reason of its quality and not by mere chance of birth or fortune. What prevails if leadership has the divine rights of a king, the blue blood of a Puritan, the fortune of a Croesus, if there is not bred into the hewers of wood and the drawers of water, the talent of recognition of wise leadership?

Great industrial questions are coming up. The questions of social and industrial insurance; of minimum wage; of collective bargaining; child labor, and a score of questions now before the people must be answered by those who think while they work and not by those who simply think without active participation in

work. The son of Sirach seemed to believe that these questions would be solved only thru the wisdom of the scribe for he tells us that "The farmer, the artificer and the potter shall not be sought for in the council of the people, in the assembly they shall not mount on high; they shall not sit on the seat of the judge, and they shall not understand the covenant of judgment; neither shall they declare instruction in judgment and where parables are they shall not be found."

The issue is squarely before us: Shall we train some men thru cultural education to think and some thru vocational education to work? Shall we ignore in our educational practice the job end of life to make the man, or shall we ignore the man end of education to make the job? Some one may say that I am only setting up a row of paper soldiers for the sake of shooting them down. But it is clear that discussions in education today are constantly revolving around these questions. And it seems about time to recognize that both the man and the job must be considered—not as separate and distinct and even opposing factors in education, but rather as two complementary factors which go into the making of intelligent and useful citizenship. The measure of a man is what he does with that he knows, as well as knowing well what he does. One cannot separate his life from his work nor his education from his life—each reacts upon the other. Farming tomorrow will not consist alone in "turning furrows" or "giving heifers their fodder." The applications of science have gone from the field of facts into the fields of corn. Heifers have need of balanced rations as well as bundled hay. The learning of the alchemist has gone out from the world of philosophy into the larger laboratory of the shop and field.

It is no idle play on words to say that there is not only need of making the man fit the job, but also necessity of making the job fit the man. A few years ago a Western farmer had only to turn his furrows and the rich alluvial deposits of the ages lended themselves to his harvest. Well did he follow the injunction of Sirach's son for he plowed and plowed until his corn crop diminished. Then he taught himself science and applied its principles to soil fertility. He made, in other words, the job fit the necessity of the hour and as a forward step brought improved labor-saving machinery to his aid and accomplished greater results with less manual work. In other words, he finally made the *job fit the man*. When a man takes only a job, he may be a farmer, but when he trains himself for the job, he is likely to become an agriculturalist. A man may be either a horse doctor or a veterinarian; a plumber or a sanitary engineer; a machine hand or a machinist; a politician or a statesman. It all depends upon the simple educational question—Has he fitted himself to the lowest level of his job, or is he *bringing his job to the highest level of the man*?

But I must go further. The job itself is becoming very complicated. Not only is science and technology entering into it, but also great economic and social questions are coming to the front. Our farmer, even with his regenerated soil and improved machinery at hand is

facing the economic problem of disposing of his products and he finds that the middle man absorbs over half of his profits. The plumber discovers that even with technical training he is often without steady work. The machinist finds that altho he has a knowledge of working drawings, the automatic machine which he operates demands no technical training. And the statesman who earnestly desires to impress the public meets with an unresponsiveness. It is more impressed with the light words of the demagogue.

The education of the mass of our people is the hope of the democracy. Men must learn not only to serve because they must live, but also to live that they may serve. The coming century will see marvels in social justice surpassing even those of industrial enterprise which have crowned the last century. This justice will come only thru developing the right point of view in the workers themselves. The son of Sirach granted that these workers maintained the fabric of the world when he stated: "Without these a city is not built. And they shall not dwell nor walk about therein." But unfortunately, if I read it rightly he would not grant that they would ever be sought for in the council chamber.

In view of our present industrial problem we can ill afford in our educational practice, to separate intellectual attainments and manual skill. We are not in the days of Sirach when one man could be always thinking and the other always working; where one would be called a gentleman of leisure and the other a machine hand. As a matter of fact, the worker ought always to be a thinker and the thinker always a worker, but both should be gentlemen out of leisure, in leisure, but never because of leisure.

Let us not be confused by either the college president or the so-called man of affairs. The one would have the educative process revolve around the man. The other would have it revolve around the job. Such reasoning would give us two circumferences with two centers—if you want to be a man you choose the one; if you want to be a job you choose the other, but what sort of a man would we have without a job and what sort of a job would we have without a man? The increasing wealth in the country gives us examples of men without jobs and the automatic machine shows us how jobs can exist without men.

Is there no way of bringing these two points of view together? Must we always separate brains and work—culture and vocation—head and hand—in pedagogical discussions? Are we still in the days of Sirach? Are we ever going to believe that all knowledge and all training is for use and for service and that all education is to prepare one for the vocation of living and living well; that education may make for better health, for greater happiness, for more contentment, for a larger pay envelope, for better homes, for finer citizenship but always it is to be used and is to find its expression in a Better Man and a Better Job?

So instead of two circumferences drawn with two centers resulting in two circles standing side by side, giving the idea of completeness in each figure but lack-

ing relationship between the two figures, let us draw an ellipse with two foci, one of which we will label the Man and the other the Job. Any school boy will tell us that the simplest way to draw this figure will be by taking two pins, a piece of string and a pencil and fastening the ends of the string to the two pins which have been placed one on each focus, and let the pencil move freely by keeping the string taut. You will notice that the length of the string is constant, that the foci are fixed and that the only variable quantities are the respective lengths of the two portions of the string on each side of the pencil. Now may we not think of the educative process as being elliptical with fixed foci, and the emphasis on certain phases of the educative process as varying as the process continues thru the different periods of child and adult development? Let us place beside the focus labeled "Man" the topics of health, personal character, personal citizenship and information. Beside the focus labeled "Job" we will have the qualities of skill, socialized character, socialized citizenship, and technical knowledge. Now we start out drawing our ellipse with the string and pencil at the left-hand side of the paper nearest the focus marked "Man." We see that the pencil is nearest the topic of health. This qualification in my educative process is placed first without reservation. Nothing is to stand in the way of training for health, but we must remember that a few arm and leg movements for a few minutes a day in the school-room will not bring it, nor will a recess lunch on baker's cakes keep it; nor will a lesson on bones or blood preserve it; neither will a hurried breakfast of griddle cakes and coffee induce it. Even the child cannot always bring it about if his parents lack it. It is a game of the educative process to be pursued everlastingly by parents, teachers and citizens.

But we are slowly drawing the ellipse and emphasis is now upon personal character and you wonder, perhaps, why I put this second. It is not that I value character less, but that often good health contributes to character. Compare the disposition of the sickly child with that of the sturdy boy, or note the difference in temperament between your ruddy-faced and your dyspeptic companions and you will no longer fail to see the point.

I have used the term "personal character" in the first column while in the other column there appears "socialized character." The man end of education requires obedience to the commandments and the laws of the church and society, but the Man might do all these things and yet fail to meet the Job end of life. Yes, more and more every day training for socialized character is needed. Our grown up boy who has learned the law and the ten commandments and goes to church may perhaps be the owner of a sweat shop where shirt waists are made, and perhaps the building has no fire escapes and its exit doors open inward; it has wooden partitions, unclean toilets and a dust-laden atmosphere. Perhaps he mixes in this factory melting pot the blood, the morals, the very life spirit of young girls and fashions, this handiwork of God into ninety-eight-cent shirt waists and hides from direct responsibility behind the corporate

name. Such a man needs character training for the Job as well as individual character for the Man.

Then there is the employee who would not steal a cent or cheat his grocer, but he may lack vocational character in that he will steal time belonging to his employer or demand a wage equal to those who are his superiors in skill and capacity.

"Personal citizenship" is next on the list. To know the laws of one's own country and the duties of public officials is well enough. But to take this knowledge of human progress and self-government to the ballot booth and there, hidden from public gaze, to mark his ballot as he sees fit in his secret process, is another problem. He need not here be guided by the wishes of his associates or his employer. If taxes are high, he may attempt to elect men who say they will make them low. If he has no children in the school, he may vote down additional taxes due to increased school expenses. If he rents his home, he may vote for extensive municipal improvements. If he owns his home he may say that taxes are too high. In short, he may vote as he thinks or as his whim dictates, or as he is paid to do. But the country today needs another type of citizenship and I call it socialized citizenship. It is in the job end of life and appears as the pencil moves along the ellipse which we are making, toward the second focus.

What about this "socialized citizenship"? We left our man at the ballot booth, but tonight he is at the union headquarters. No longer shut in behind the walls of the ballot booth, he must now stand on his feet and state openly his opinions. He must rise or fall with his comrades. If a strike order is issued he must give way to the common good even if he is satisfied with his own condition. He is learning his first lesson in co-operation. Or, perhaps he is a non-union man and his task is no less difficult. We shall find that in the coming days social and economic needs will demand a highly and more complex expression of citizenship than we have previously conceived as concerning itself with the duties of individual citizenship. Back of the solution of the most pressing industrial problems there is the tremendous need for changing our conception of training in citizenship from the individual to that of the co-operative or social basis.

I have left "information" until the last in the first column. Undoubtedly you have worried. Perhaps you were afraid I was about to forget the necessity for problems of partial payments, negative exponents, the causes of wars or the dates of reigns of kings, and very likely you believe that I am about to assail the present methods of our schools and suggest the teaching of information which is "practical." Very likely I would if I knew what information was practical and useful. I well remember for my own purposes as I saw them in my younger days, that English and history were useless and shopwork, mathematics and science were very practical. As a matter of fact, today I have more occasion to use the "useless" than I have to use what I formerly called so very useful. Electricity may be useful to the electrician. It may be useless to the historian, but when the electrician comes to be a consulting engineer and

has occasion to draw up contracts and submit expert testimony before courts, the English which he formerly considered useless may be turned to useful account, and even the historian may find a knowledge of electricity useful and profitable when his front door bell fails to ring because the battery has run out. It is extremely difficult, yes, even impossible to distinguish between useful and useless information. While I believe that business English, shop mathematics, applied science, industrial history and economics go with the job, I am convinced that the further a man gets into his job, the more he sees the need for literature, theoretical mathematics and science and development of human society in its historical aspects.

Our pencil is approaching the second focus. The string which was formerly the longer is becoming the shorter and we have reached the topic of "skill." Now skill is a matter of the hand and of the brain. It is an affair of the body and of the head. We have all seen men who had healthy bodies but who were worth only a dollar and a half a day from the collar button down working at ditches. We have seen a similar man at the intricate automatic machine feed raw material into it because it was cheaper to hire a man than it would be to devise and operate a machine to do the feeding. But give that man the quality termed "skill" and you see the clear-eyed individual and a pay envelope with two figures to the left of the decimal point. The Man needs health, but the Job needs skill.

The pencil has now traveled far enough to make half of the ellipse. It is nearest to the focus marked "Job." The educative process is half over. The youth is about to leave school and whether as a doctor or a lawyer or a teacher or a plumber or a clerk his education should be close to his job and no youth should be allowed to leave school until he has had some training for and knowledge of the road to work. And, if the boy is to be a plumber he shall have the same fair start toward that trade which the doctor has when he leaves the medical school.

As I have said, the educative process is half over. The school days are all over, but, you know, there is a difference between the two things—*education* and *schooling*. The youth has now gone to work and the pencil moves on the downward path for the second half of the ellipse. But it is still near the focus Job and the youth in the apprenticeship or the continuation school or night school or correspondence school or thru trade journals is still to receive added training helping him in his job.

However, the pencil is moving and the youth is now a man in the thirties, and the radius which was the shorter is gradually coming to be the longer. In other words, our educative process is again reversing and we are approaching the Man end. It is the period when we begin to realize our power or our weakness; when we begin to draw upon the "useless"—upon the things which

we did not care to study—the things which concern individual development rather than job development. When we are young, for example, we think little of the necessity for health, but at 35 if we haven't it, we see the need for it. As we approach a position of responsibility, we see the need for strong, individual character training and the information which in those early days we considered "useless" now, thru the job and the development which has come out of the job brings us to realize the necessity for a command of good English, appreciation of literature, knowledge of world events and power of interpretation of human progress. At this time of life we see individuals with dry rot, or we see men of strength. I believe that these conditions are largely the result of the job thru which they have gone. If the job has required power, it has brought power; if it has required intelligence, it has brought intelligence; if it has required character, it has brought character; if it has required a social consciousness, it has brought a social consciousness.

I wish I might write sometime of the human necessity for doing more to make Jobs fit Men; to give to employment some of its old creative power for developing the individual and not so much attention as is now given towards devising plans for making men fit Jobs.

We must push the pencil on. We are again nearing the Man focus. What a long way we seem from the Job! The man is thru with active work; his skill of hand has gone. He has no use for technical knowledge. He is out of touch with his former fellow workers and citizens and he no longer is required to exercise the duties of socialized citizenship and character. He is a long ways from his job. Perhaps he is sitting on the piazza or by the fireside as the world goes by. His thoughts are turned inward, his mind is upon the past. His failing memory slowly allows more information to pass away. He no longer goes to the booth to cast his ballot and he has left only "personal character" and "health" and at the close he goes out of the world because of the absence of that quality which I named as being of primary importance—that is "health."

Yes, the educative process is elliptical. It is not circular with equal emphasis at all times on both the Man and the Job. Neither does it consist of two contrasted circles, one for the culturalist and labeled "Individualist" and the other for the vocationalist and marked "Job." Neither is it all a school process for half of it, at least, is an out of school process and for many of our best thinkers and workers it has been almost an entirely out of school affair. Its emphasis is not on culture, nor on vocation—its expression is not to be measured by capacity for retaining facts from books or by skill in turning furrows. Its results are not to be judged by college degrees or by pay envelopes. The educative process can have no other standard set before it than the making of *Better Men and Better Jobs*.

HELPING A BOY TO SEE THRU HIS JOB

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TO make a shop lay-out a boy must be able to plan and see thru his job. He must have good imaginative powers to be able to picture in his mind a completed project while looking at a rough sketch or architect's plan. This is more or less a natural gift, but the school can aid him materially in acquiring it. He must reason out in his mind the intersections of all the various parts of the project and know whether they can be assembled properly before he attempts to get out his stock. One miscalculation may cause him serious trouble before the project is completed.

The milling of the second step in a given process depends on the correct milling of the previous step and so the assembling of all the processes to make the completed project must depend upon the correct milling of all these processes; otherwise the various parts will not fit or intersect and cannot be assembled, sometimes causing serious delay and waste of material and labor.

One of the best ways of presenting the problem of a shop lay-out to a boy is somewhat the same as a full size detail drawing might be of any given project, showing a section of the width, height and depth.

As a foundation for this article, I have selected a school drawing room table, ten of which were recently constructed in the carpenter shop of Pratt Institute, Brooklyn, N. Y., by student labor, using the following methods which were employed with satisfactory results.

It is not my purpose to explain how to construct one of these tables as there are too many processes involved, but to consider this plan a typical example to use in demonstrating the value of a shop lay-out.

The architect's plan (a scale drawing) from which the lay-out (a full size drawing) is taken, is shown in Figure 1 and the shop lay-out is shown in Figure 2, width, height and depth. All the dimensions are given on the plan and it is unnecessary to reproduce the same figures on the lay-out.

For our purpose we shall use two 12" shelving

boards of convenient length, about 6' 6" long, on which to make the lay-out, (a-b) (b-c) Figure 2. A shelving board makes a good surface for a lay-out board and is used in preference to paper because it is in constant use during the progress of the work and is not so easily destroyed or mislaid.

Joint one edge of the boards for a working edge and with a marking gauge lay off parallel lines of indefinite length, as shown in Figure 2, (width); the first line about $\frac{1}{4}$ " from the edge of the board to give the outside line of the top and the second line $1\frac{1}{4}$ " (the thickness of the top) from the first line. Three-fourths inch from this line make a third paralleled line marking the thickness of the skeleton frame.

Beginning about 6" from the end of the board, measuring from left to right, with the aid of a sharp knife and a try-square, mark the extreme outside line of the top, only cutting the line between the two gauge marks which give the thickness of the top. From this mark compute all the dimensions given on the plan.

Lay off in successive order $\frac{1}{2}$ " for the projection of the top over the skeleton frame, $\frac{3}{4}$ " projection of the frame over the face of the leg, $2\frac{1}{4}$ " thickness of the leg (to be drawn of indefinite length and stopped with a broken line, as a full size drawing is shown in the height and need not be duplicated), $18\frac{7}{8}$ " length of apron, $2\frac{1}{4}$ " thickness of second leg, $16\frac{3}{4}$ " width of the opening for the drawing boards, $2\frac{1}{4}$ " thickness of the third leg, $18\frac{7}{8}$ " length of apron, $2\frac{1}{4}$ " thickness of the fourth leg, $\frac{3}{4}$ " projection of the frame, $\frac{1}{2}$ " projection of the top. These figures total the full width of the table, 5' 6" (see Figure 2).

The side panels are shown in dotted lines on the second and third leg, set in $\frac{3}{8}$ " from the face of the leg and laid off $\frac{7}{8}$ " the thickness of the stock to be used. The thickness of the $\frac{3}{4}$ " top shelf can now be put in directly under the skeleton frame and is dadoed into the panels on either side $\frac{1}{4}$ ". The $\frac{5}{8}$ " upright is exactly in the center so that all the drawers will be the same size and

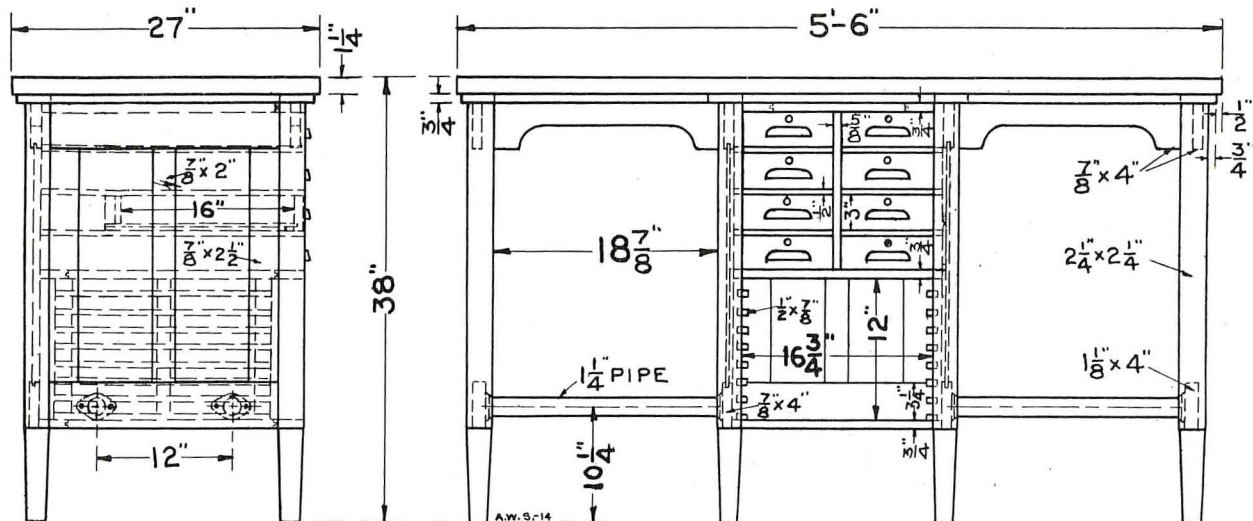


Fig. 1. Architect's Plan (a scale drawing).

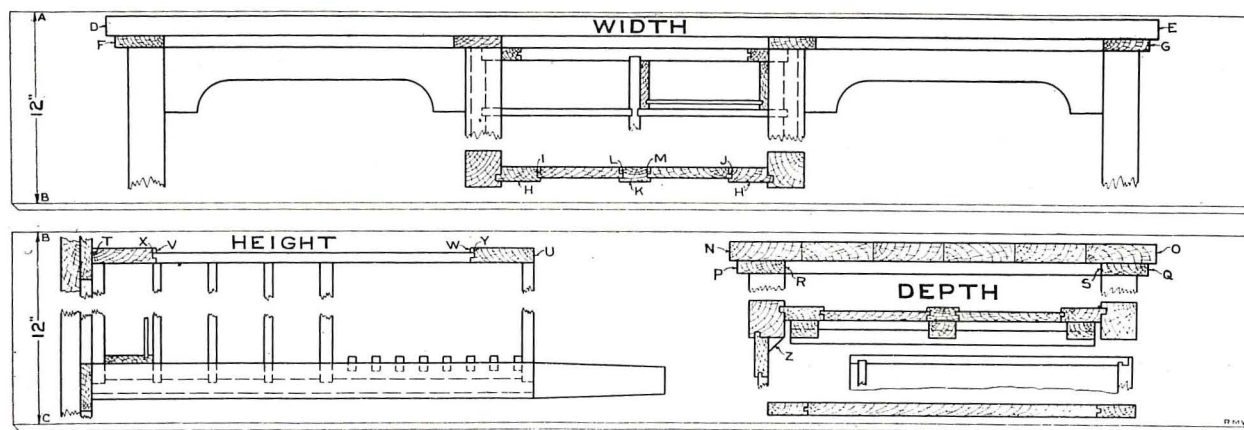


Fig. 2. Shop Layout (a full size drawing).

is also dadoed into the top and bottom shelf $\frac{1}{4}$ ". The $\frac{1}{2}$ " shelves are then put in 3" apart and are dadoed into both the upright and the side panels $\frac{1}{4}$ ".

The $\frac{3}{4}$ " shelves are made with a flush panel on both sides, let into a frame made up of $2\frac{1}{2}$ " stock, doweled together to prevent warping.

A front view of the drawer is given showing the two sides and the bottom. The four rails as shown in the skeleton frame are self explanatory. The apron rails are laid off 4" wide and shaped to allow room for a boy sitting at the table. The back of the case is a duplication except the center panel which only needs to be laid out. Continuing on the line of either leg, lay out a square $2\frac{1}{4}$ " x $2\frac{1}{4}$ ", the size of the stock to be used for the legs (Figure 2, width). The legs are plowed $\frac{3}{8}$ " x $\frac{3}{8}$ " to receive the stile of the panel, which is rabbeted to fit and sets in $\frac{3}{8}$ " from the face of the leg.

The same principles are applied in making the lay-out of the height and depth as shown in Figure 2.

All gauge and knife lines should be traced in with a sharp lead pencil and all pencil lines outlined again with a red pencil. All rails showing end wood are lined in with cross section lines.

In commercial practice a rod is all that would be required in laying out this project. A boy will readily grasp this method when he understands his problem and knows what he is doing and is thrown out into the commercial world and compelled to rely upon his own

resources. The boy will learn after some experience that in laying out various projects it will be unnecessary for him to lay out the entire project as here presented, but only such parts of it as require some figuring on the part of the boy to determine the size of the stock. The measurements are given on the plan in some cases and why reproduce them in the form of a drawing and then apply the rule to that drawing. As an example, the size of the top is plainly given on the plan as 27" x 5' 6", the aprons as 4" x $18\frac{7}{8}$ ". A boy at this period of his experience is unable to picture in his mind a completed project, so by some such development as here suggested showing all sections in their relative positions to the intersecting parts of the project, he is not compelled to think and study out some missing link.

Use of the Layout—Stock List.

The complete stock list for this table is given below. The size of every piece of stock required to construct this table, thickness, width and length, is found on this layout full size.

Frame.

- 1 Counter top $1\frac{1}{4}$ " x 27" x 5' 6".
- 2 Stiles $\frac{3}{4}$ " x 3" x 5' 6".
- 2 Rails $\frac{3}{4}$ " x 3" x 2' 3".
- 2 Cross Rails $\frac{3}{4}$ " x 3" x 1' 8".
- 6 Shelves $\frac{1}{2}$ " x $23\frac{1}{4}$ " x $9\frac{9}{16}$ ".
- 6 Stiles $\frac{3}{4}$ " x $2\frac{1}{2}$ " x 1' 8".
- 6 Rails $\frac{3}{4}$ " x $2\frac{1}{2}$ " x 1' 7".
- 3 Panels $\frac{3}{4}$ " x 19" x 1' 3".
- 1 Upright $\frac{5}{8}$ " x $18\frac{1}{2}$ " x 1' 2".
- 8 Legs $2\frac{1}{4}$ " x $2\frac{1}{4}$ " x 3'.

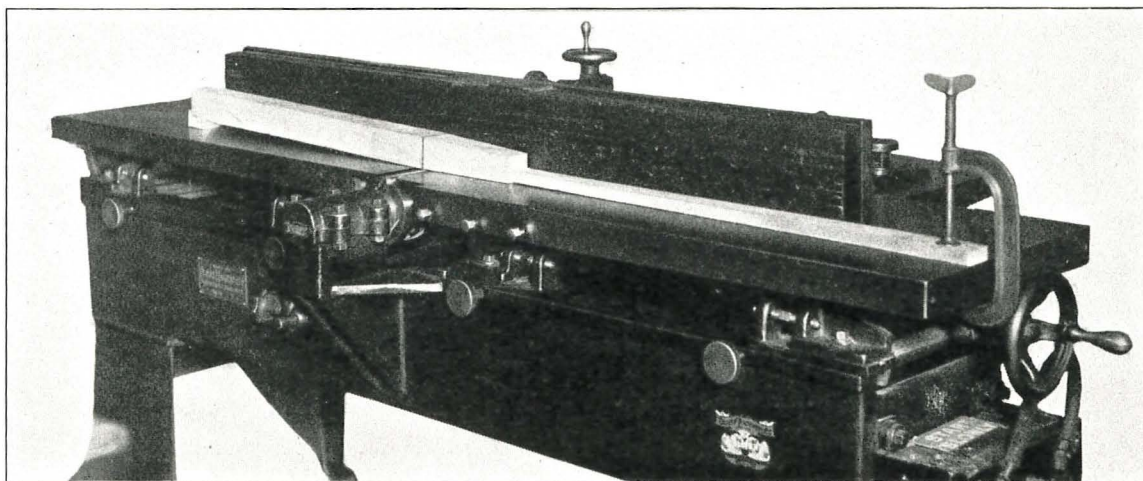


Fig. 3. TAPERING THE TABLE LEGS.

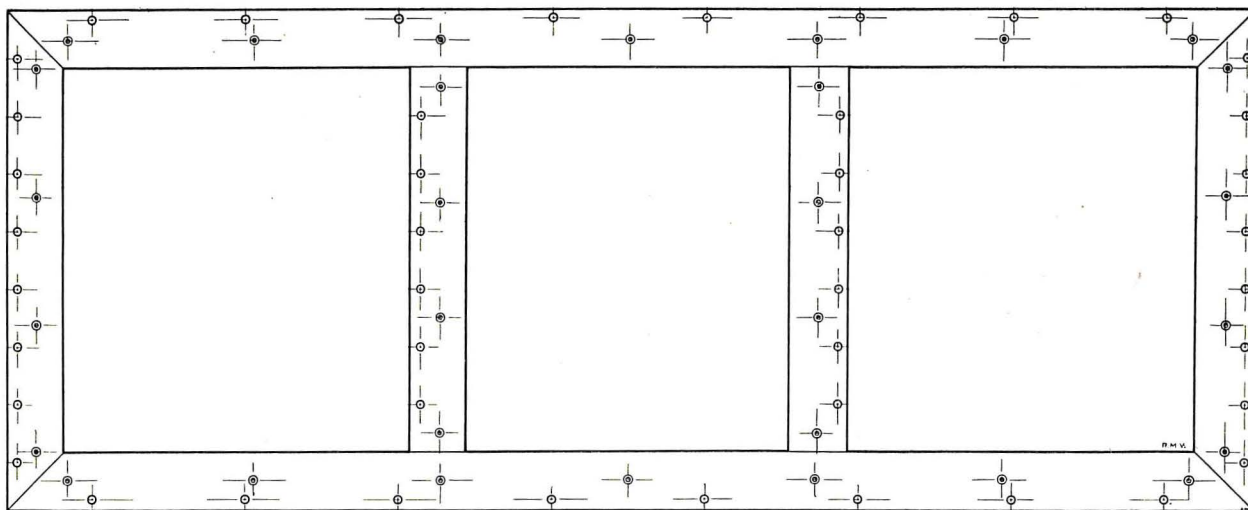


Fig. 4. Skeleton Frame (F to G in Fig. 2).

Note the number of holes for stop bead adjusters and screws to be bored before gluing the frame up.

- 4 Rails $\frac{7}{8}$ " x 4" x 1' 6 $\frac{7}{8}$ ".
- 2 Rails $\frac{7}{8}$ " x 4" x 1' 8".
- 2 Rails 1 $\frac{1}{8}$ " x 4" x 1' 8".

Side Panels.

- 4 Stiles $\frac{7}{8}$ " x 2 $\frac{7}{8}$ " x 2' 4 $\frac{1}{2}$ ".
- 4 Rails $\frac{7}{8}$ " x 4" x 1' 3 $\frac{3}{4}$ ".
- 2 Muntins $\frac{7}{8}$ " x 2" x 1' 7 $\frac{3}{4}$ ".
- 4 Panels $\frac{5}{8}$ " x 7 $\frac{1}{4}$ " x 1' 8 $\frac{1}{2}$ ".

Back Panels.

- 2 Stiles $\frac{7}{8}$ " x 2 $\frac{7}{8}$ " x 2' 4 $\frac{1}{2}$ ".
- 2 Rails $\frac{7}{8}$ " x 4" x 1' $\frac{1}{2}$ ".
- 1 Muntin $\frac{7}{8}$ " x 2" x 1' 7 $\frac{3}{4}$ ".
- 2 Panels $\frac{5}{8}$ " x 5 $\frac{5}{8}$ " x 1' 8 $\frac{1}{2}$ ".

8 Drawers.

- 8 Fronts $\frac{7}{8}$ " x 3" x 8 $\frac{1}{16}$ ".
- 16 Sides $\frac{1}{2}$ " x 3" x 1' 5 $\frac{5}{8}$ ".
- 8 Backs $\frac{1}{2}$ " x 2 $\frac{1}{2}$ " x 7 $\frac{9}{16}$ ".
- 8 Bottoms $\frac{1}{4}$ " x 18" x 7 $\frac{9}{16}$ ".

Miscellaneous Stock.

- 8 Drawer Guides 1" x 1" x 1' 6".
- 8 Blocks for Drawer Stops $\frac{3}{16}$ " x 1" x 4".
- 8 Drawer Handles $\frac{5}{8}$ " x 1 $\frac{1}{8}$ " x 5 $\frac{3}{4}$ ".
- 16 Slides for Drawing Boards $\frac{1}{2}$ " x $\frac{7}{8}$ " x 1' 8".
- 6 Cleats to receive Board Slides 1" x 1 $\frac{3}{4}$ " x 12".
- 12 Angle Blocks $\frac{7}{8}$ " x $\frac{7}{8}$ " x 3 $\frac{1}{2}$ ".
- 4 Angle Blocks $\frac{7}{8}$ " x $\frac{7}{8}$ " x 2 $\frac{3}{4}$ ".

Summary for Determining the Cost of Table.

23 ft. 1 $\frac{1}{2}$ in. Ash @ 8 $\frac{1}{2}$ c.....	\$1.96
23 ft. 3 in. x 3 in. Ash @ 10c.....	2.30
87 ft. 1 in. Ash @ 8c.....	6.56
12 ft. $\frac{3}{8}$ in. Bass @ 3 $\frac{3}{4}$ c.....	.45
8 Waste Nuts48
4 lengths 1 $\frac{1}{4}$ in. Pipe 1 ft. 7 $\frac{1}{8}$ in. long.....	.38
3 doz. $\frac{3}{4}$ in. No. 10 Screws.....	.05
2 doz. 1 $\frac{1}{2}$ in. No. 8 Screws.....	.03
3 doz. Stop Bead Adjusters and Screws.....	.72
8 Drawer Locks	4.00
Glue, Dowels and Nails.....	.35
Stain and Varnish.....	1.25
Cost to manufacture with student labor.....	\$18.53
Manufacturing Charge (6 days' labor).....	27.50
15% Profit (rent, power, wear on plant, etc.)..	6.91
Manufacturer's Selling Price.....	\$52.94

The size of the top is found to be 1 $\frac{1}{4}$ " x 27" x 5' 6", which is determined by applying the rule on the layout of the depth (n to o) which is 27" over all. Applying the rule on the layout of the width (d to e) the length is found to be 5' 6" over all. The thickness 1 $\frac{1}{4}$ " will be found on all three layouts.

The dimensions of all other items are found in the same way.

Milling the Stock.

Scientific management, the elimination of false moves, plays an important part in the management of all well conducted and paying mills. Quick production is the secret of success and the study of a method whereby every movement counts should be thoroly impressed upon the boy while he is yet in the school.

In turning out commercial work in the school mistakes as far as possible must be avoided. A boy not appreciating the value of accuracy is more or less careless because he does not see the ultimate outcome of his operation, that is, that the success of the next step toward the completion of the project depends largely on his accuracy in working his immediate step. With the aid of jigs and other devices he can be materially helped and oftentimes prevented from making unnecessary errors.

A few of the most important processes involved in constructing these tables are shown in the following illustrations. Figure 3 shows a very simple method of tapering the legs, which is done by dropping the back table of the jointer down a distance equal to the amount

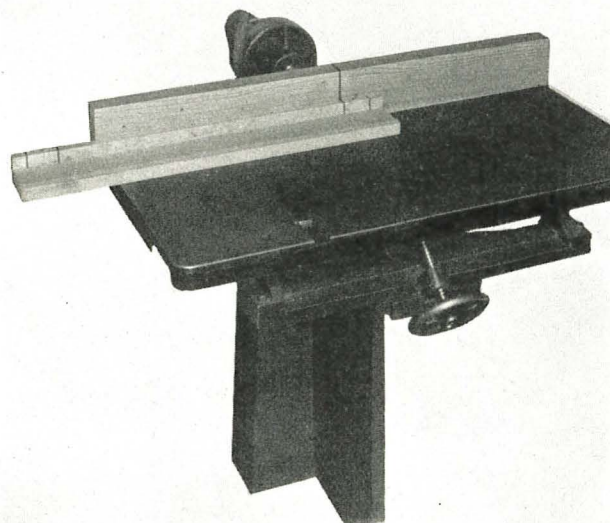


Fig. 5. Boring the Stiles for Dowels. Note the removable layout rod, insuring uniformity in boring.

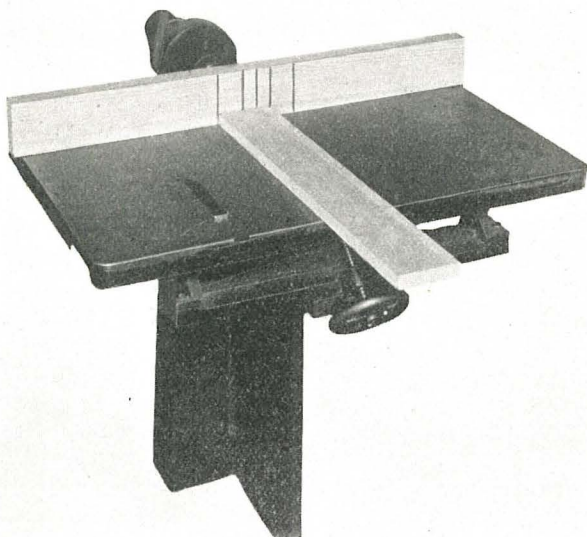


Fig. 6. Boring Rails for Dowe's.

of taper required. Fasten a strip on the table to prevent leg from kicking back and also to regulate the length of taper required. Pass the stock forward over the cutters on all four sides.

Figure 4 is a detail drawing of the skeleton frame which is first fastened to the body of the table and to which the table top is fastened by means of screws and stop bead adjusters, which makes a very strong top, taking care of any shrinkage or swelling that may take place. In planning this job all the various holes must be located and bored on the machine before assembling the job. The holes in the outer row are bored to receive the stop bead adjusters while the inner row shows the position of the screws by which the frame is fastened to the body of the case. These holes must also be countersunk on the machine before gluing the frame up.

Figure 5 is a good method to insure uniform boring when the work is performed by student labor. Two strips are cut the required length and lines laid off locating the center of all dowel holes to be bored. A form is fastened to the bed of the table with a line drawn across the face locating the center of the bit. Tack the strip on the stock to be bored. Place the stock on the machine until the line on the strip intersects with the line on the form on the machine and bore; move the stock along boring at each layout on the strip. By using two strips one boy can prepare one piece of stock for boring while the other does the boring thus keeping the machine in constant action.

Figure 6 shows a method of boring the rails: Use the same form on the boring machine and produce lines on either side of the center line, already on the form, distances equal to the same distances on the layout on the strips used in the previous operation. Place the face edge of the rail in line with the first mark on the form and bore, move the same edge along to the second line and bore. To have accurate boring, it is essential to do all boring before planing to receive the panels.

Figure 7 is a very accurate way of spacing any given number of dados. The pieces of stock used as a form are equal in width to the size of the space plus the width of the dado. If the spacing is 3" and the dado $\frac{1}{2}$ " the

forms should be ripped $3\frac{1}{2}$ " wide. Run the stock to be dadoed against the side of the first strip, No. 4 in the illustration, which acts as the fence in this case, remove No. 4 and run the piece over again against the side of piece No. 3 for the second dado and likewise the remaining dados. The forms should be numbered so they can be replaced on the machine in the same rotation.

Assembling the Project.

To assemble the table requires as much skill as many of the milling processes. The back panel is first glued onto the legs. After the glue sets the two side panels can be glued fast to the back, leaving the front legs loose until after the shelves are placed into position.

Glue and nail the upright fast between the two shelves which is dadoed to receive it. Put the three $\frac{3}{4}$ " shelves in position in the case, driving the nails only partly home as it may be necessary to spread the sides a little to get the small shelves in place.

Remove the front legs, glue and slide the $\frac{1}{2}$ " shelves in position in the dados, replace the legs and clamp the whole case together, driving the nails already started in the $\frac{3}{4}$ " shelves all the way home and setting them at the same time. Square the case and allow the clamps to remain on until the glue sets.

The face of the center case is then dressed off even with a plane and sandpapered, also the sides and back are again scraped and sandpapered to have them thoroly clean for the painter.

The aprons, rails and outside legs can now be glued in position. Angle blocks are glued in every corner to reinforce the dowel joints. Screw the skeleton frame fast to the aprons, rails and case. Lay the top, face down on a pair of horses, turn the entire case and frame over in position on the top, screw the top fast, putting a screw and stop bead adjuster in every hole already bored to receive them. The table can now be turned over, the ends squared and cut off.

Dress the top off by hand by working across the grain first with a long foreplane, and then with the grain, finishing with a smooth plane, scraper and sandpaper. The job is then ready for the painter.

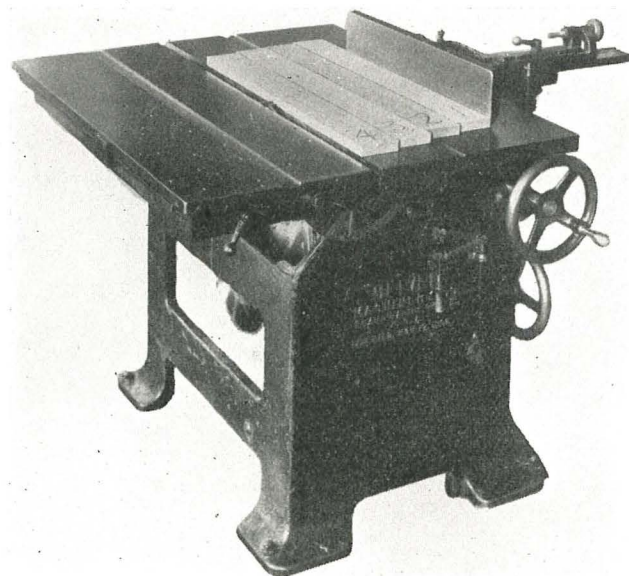


Fig. 7. Dadoing Sides for Shelves. A good method to insure equal spacing.

MAY DAY LUNCHEON

Edith Phelps and Mabel Arbuckle, South Bend, Ind.



NOTHING is more indicative of changing social conditions than our increasing recognition of fete days. We should encourage this awakening interest in legendary romance—this bringing of joy and sentiment into our busy, practical, commonplace lives.

Charming in sentiment is the May Day—bursting the bonds of winter—all nature springing into beauty of life and activity.

"Ho! The Merrie first of May,
Brings the dance and blossoms gaie,
To make lyfe a holiday."

So gayly sang our English cousins on this fete day, which they celebrated with enthusiastic song and dance on the village green. The directors of art should welcome the innovations of the fete days and give them a place in the outline of study, if for no other reason than the joy they bring to the children.

May Day with its gifts of fruits and flowers is a custom most worthy of revival, so let us celebrate with a May Day Luncheon. Recognizing the lack of simple and artistic table appointments on the market, and the wide demand there is for these, it is a work of much interest and practical benefit to teach the making of these requirements which add so much to hospitality.

Emphasis should be placed on the artistic service of meals in the Domestic Science Department, the lack of which results in making the meal a duty instead of a delightful ceremony. Artistic efficiency should be a part of every woman's education and most important is the treatment of the diningroom and its appointments. The following simple menu may be served to the children on this bright May Day:

Whipped cream	Cream of celery soup	
Sweet breads	Wafers	Olives
Green peas	Hot biscuits	New creamed potatoes
Asparagus salad		Grape juice
Ice cream (bird mold)	Brown bread sandwiches	
	Individual cakes	
	Violet and green bon bons	

In planning the menu, the color scheme should be as carefully considered as the proper balance of foods. At this time strawberries would be a desirable addition to the menu but the color scheme being violet and green, red cannot be introduced. On the invitation, make decorative drawings of old-fashioned boys and girls.

These may be executed in black and white with violet and green in the bouquet. The little host or hostess may bid their guests in rhyme to this May Day Luncheon.

"When May Day dawns all bright and gay,
Put all your sorrows and cares away.
Don your bonnet and sunny smile,
For a May Day party is now the style."

Or,

"Tis ye old time custom
On May Day at rise of sun,
With a basket of flowers
To your friends to run."

Then comes the making of the place card. Violets as a motif may be repeated in a conventionalized border across the top of the card; or blue birds and May baskets

in bi-symmetric arrangement may be designed. The table should be rectangular in shape conforming to the structure of the room. It should be laid with a white damask cloth and covers for ten guests. The straight line, octagonal china and crystal is much better in design, conforming to the rectangular or square tables. Have little or no decoration on china, crystal and silver. If designs are used, keep to simple patterns and in the china use little color. The illustration shows the correct placing of the place plate, bread and butter plate, goblet, silver, napkin and place card. Napkins can now be obtained in rectangular shape which is much more desirable than square, not only fitting the lap but folding to better advantage and more pleasing shape. The table decorations are of violets and blue birds.

The violets are placed in reed baskets, one rectangular basket in the center of the table and four smaller square baskets at the corners of the table as illustrated. In each of these four smaller baskets is placed a May Pole with a blue bird topping it. The pole is wrapped with four violet ribbons. These extend from the top of the pole to the four corners of the basket and are twined with smilax.

Directions for making square baskets: Bottom of basket is of $\frac{3}{8}$ inch stock, basswood, $3\frac{1}{2}$ inches square. Drill holes size of reed, one on each corner and $\frac{1}{2}$ inch between each spoke, making five spokes between the corner spokes on each side of the basket. Insert spokes of No. 2 reed, seven inches in length. At the base, leave $1\frac{1}{2}$ inches of spoke to make the bottom coil. With pliers pinch each reed next to basswood, that when bending to make the coil, the reed will not break. Carry one spoke in front and around spoke at left, continue until coil is finished on all sides. Turn basket and with two long weavers of No. 2 reed, proceed with double weave. Start two weavers behind two succeeding spokes, taking upper weaver behind the next spoke, and lower weaver in front of next spoke. Cross and continue this weave until basket is two inches high. Finish with coil at top. See illustration. The rectangular basket is made in same way, on basswood base 7 by 15 inches, using No. 2 reed for spokes and weavers and keeping spokes $\frac{1}{2}$ inch apart.

The bird is made of basswood, $\frac{3}{8}$ inch stock. Draw and cut out blue bird, place on basswood and trace around pattern. With scroll saw, cut out bird. Attach to stick, fifteen inches in length. Paint with oil paints in naturalistic colors.

The case for bon bons is constructed according to illustration, of light green paper. Base of box measures $1\frac{1}{2}$ by $1\frac{1}{2}$ inches. Sides are one inch deep. Fasten with light green silk cord and insert in cord, at corners, two or three violets.

These violets are cut in circles, one inch in diameter, from violet crepe paper. Cut on edge as illustrated. (Figure 4.) Fold circle over hat pin and crush petals together. Place paste on center and attach strip of green tissue paper. Twist strip to form of stem of violet.

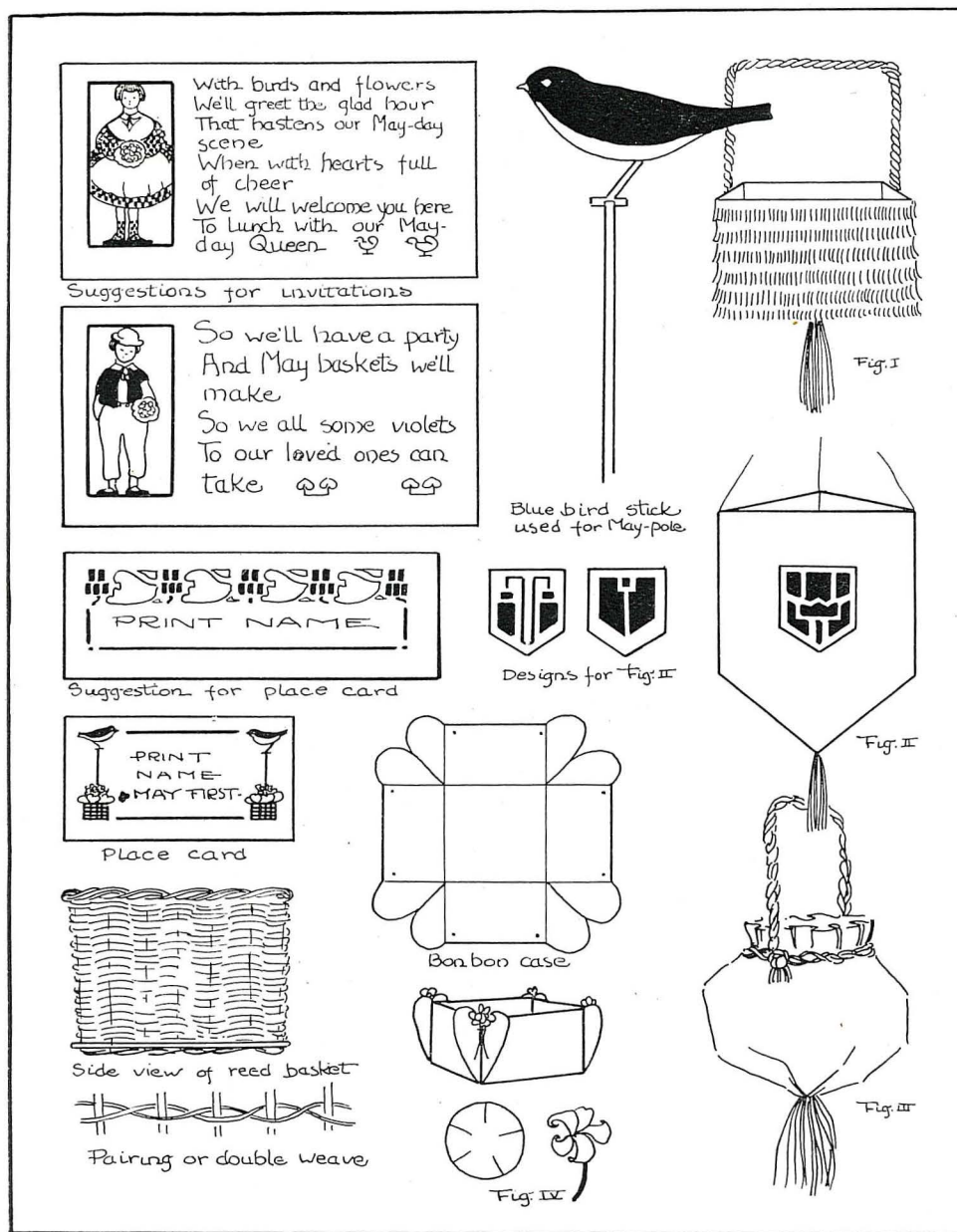


Plate I.

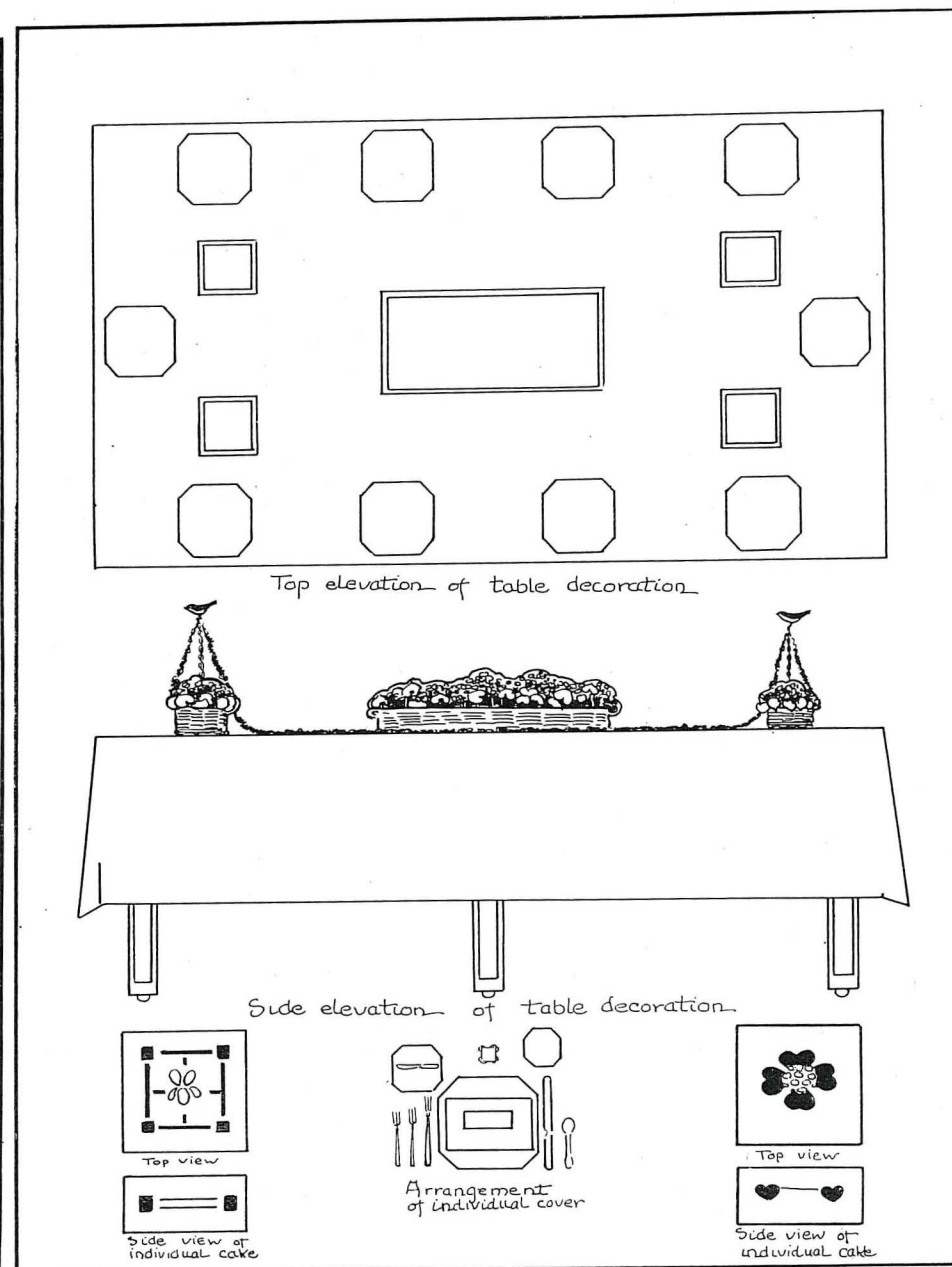


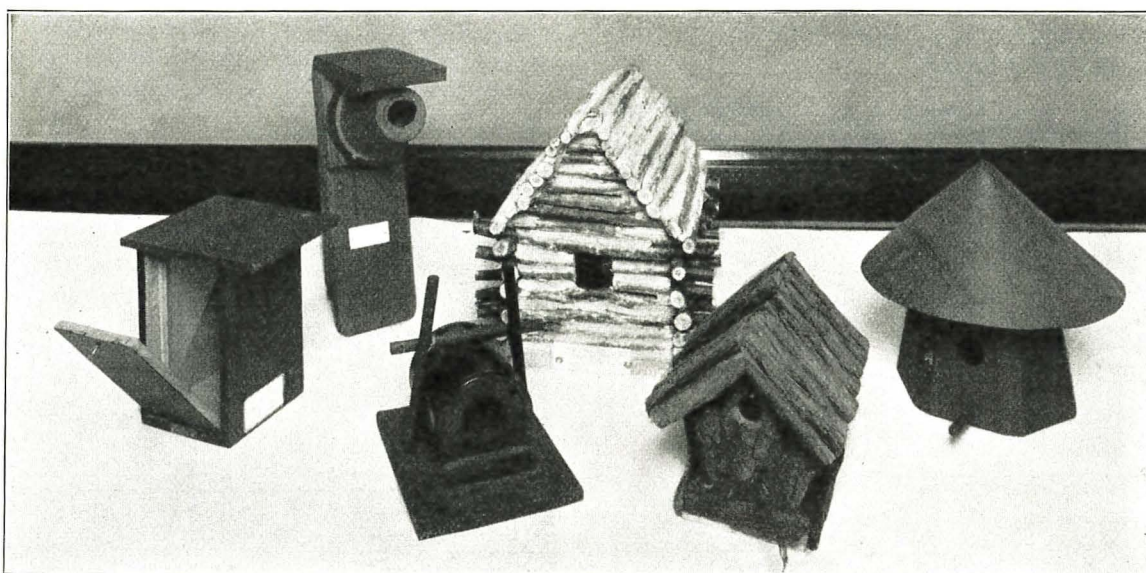
Plate II.

When the luncheon is over, the guests may be entertained by the construction of May Baskets. These baskets are to be filled with light spring flowers and hung on the door knobs of less fortunate children who have not participated in the pleasures of a May Day celebration. Colored construction and tissue papers, paste, scissors and needle and thread should be given each child.

Figure 1 is constructed by fringing strips of tissue paper and pasting to outside of cardboard box. Twist or braid tissue paper for handle. Cut long strips of tissue paper for tassel to be attached to the base of the box.

Figure 2 is a three-sided basket made of green construction paper, and fastened with green cord. Decorate with cut paper a stencil of contrasting tone, using the violet as a design motif.

Figure 3. Cut one piece of white and one piece of violet tissue paper each 8 by 19½ inches. Place strips together and crush in hands to give crepe effect. On long edge gather with needle and thread. Pull tightly together and insert violet tissue paper tassel. At top turn violet to outside, one inch deep, gather with needle and thread, drawing opening up to desired size. Attach braided handle of violet tissue paper and finish heading of basket with same.



BIRD HOUSES MADE BY BOYS IN THE ELEMENTARY SCHOOLS OF PITTSBURGH.
Mr. Frank H. Ball, Director of Manual Training.

TYPOGRAPHIC LETTERING

Fred V. Cann, Instructor in Design, The School for Apprentices,
The Lakeside Press, Chicago, Ill.



THE course in lettering as outlined in the following pages is an attempt to simplify and present the subject in an interesting and progressive manner. The simpler forms are given first and the Roman letter is studied as a model as an all around style for general purposes. It is hoped that the student will study forms of letters made by the designers of old not only as an interesting study but as a fertile source of ideas for modern work.

The lessons as planned, are not meant to be followed to the letter but rather are suggestions of ways and means of developing initiative and giving the drill necessary to insure technical skill.



Plate 1.

The study of design in connection with lettering, lends an interest to the latter that it might otherwise lack, by giving variety to its routine. It is believed that the drawing of the individual letters and characters on a large scale, brings out and teaches the details of the letters as no other method will do. Credit is due the Atkinson, Mentzer Co., The Prang Co., Ginn & Company, The American Type Founders Co., The Lakeside Press, Mr. Ralph Fletcher Seymour and the Ceramic Studio, for suggestions and assistance in compiling this work. Lettering is perhaps the most important phase of design as applied to printing and while somewhat mechanical and exacting as a study, the time and effort spent in acquiring skill in this kind of commercial art, will well repay the student.

Lettering.

As the alphabet with its accompanying characters forms the basis of printing, it is both fitting and necessary that the apprentice become familiar with its history, the better to understand and appreciate his chosen craft.

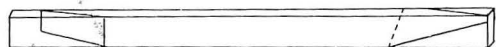


Plate 2. Home made Lettering Pen.

Lettering is studied from the standpoint of the designer as well as the printer. It is believed that in this way the apprentice will be led to see the close rela-

tionship between design and printing. The student is urged to read at least one of the many books on the history of the alphabet.

Letters in common use today, may be divided into five general groups or styles as the Gothic, Roman, Italic, Text and Script. The plain Gothic being the simplest to design of any of the letters, we may begin with this style, continuing our study of the different groups in the order named.

Next to carefully drawing each individual letter, spacing deserves our attention. In Plate 1 is shown what is meant by uniform spacing. The expanded, the regular, and the condensed letter each require special treatment, and the method of spacing for each is suggested in this drawing.



Plate 3. Single Stroke Gothic Letters.

Letter Construction.

When designing the alphabet each letter needs individual attention. Letters of any style must be uniform in size and in general characteristics. The serifs will need special attention. Letters may be designed either freehand or mechanically. The freehand will have more grace, but on the other hand they may not be uniform in size. In Plate 6 is suggested a plan for drawing a Roman alphabet freehand. The serifs are drawn, and the lines for height of ascending and descending stems are shown. The letters are not finished but are simply in outline, to be filled in solid with a brush.

Construction of Single Stroke Letters.

A good plan for the beginner to follow when lettering single stroke letters is suggested in Plate 3. In this plate the letters are grouped into straight-line and curved-line letters, each stroke shown and each letter



Plate 4.

analyzed. It is not necessary for the beginner to follow the order of the alphabet when drawing the letters. A better way is to draw each letter separately, grouping the letters into straight and curved line letters. In this way one can study the formation of the letters to better advantage. See Plates 4 and 5.

A cross-ruled paper may be used to save time and trouble. Any common pen quill or stub will answer for practice work, and if a wider line is wanted the pen may be ground, or filed, or cut to any convenient width. If the letters are to be drawn on a large scale a wooden pen made from any soft wood may be whittled to any width desired. This pen will make the stems of the letters of uniform width when the stroke is vertical, and narrow when the stroke is horizontal. With a little practice the student will be surprised at the ease with which he can make letters of any style by simply manipulating



Plate 5. Gothic Letters.

make a plain letter well, with practice, he will experience no difficulty in drawing any of the other styles.

Spacing.

Next to the construction of each letter, spacing is important. There are many rules for spacing; few of them are of practical value. Spacing will become an instinct after considerable practice. To the beginner, the safest plan to follow is to keep uniform space between each letter. The nearest to an infallible rule we may make, is that the space from center to center of each letter should be uniform. This cannot always be done with type, but in hand made letters there is no excuse for poor spacing. Plate 1 shows a simple method for spacing that works out well in practice.

Lay out a page of plain Gothic letters similar to Plate 1. Space for each letter carefully and make each



Plate 6. Roman Letters. Layout for Studying Construction.

the pen, holding at different angles—getting different styles and effects by simply changing the direction and angle of his stroke.

The single stroke letter is a good one to begin with, as it is simple in construction and is not hard to make on account of its plain lines. If the beginner learns to

word fill the whole space. Pencil in outlines of letters first, then go over these lines with pen and ink, and fill in with a brush. Make all construction lines in pencil. Be sure to keep the spacing between the letters of uniform width. Finish by cleaning up any burrs or rough edges. Erase all pencil lines.

Materials.

The materials necessary for lettering are: A good drawing board with triangles and T square; both a hard and a medium pencil, HHHH and H will do; three

fine for drawing fine lines. This pen will work well enough for rough work, but is intended for the beginner only. Thumb tacks and pica ruled paper, any good india ink, and a pen holder will make up a fairly com-



Plate 7. Modern Roman Letters, Showing Serif Construction.

sable brushes numbers 0, 3, and 6; an engrossing or shading pen and a few wide pointed stub pens. A reed pen may be made or goose or turkey quill cut to any size needed. For beginners a pen may be whittled from a piece of pine or any soft wood about $\frac{1}{2}$ inch by $\frac{1}{4}$ inch thick and 6 to 8 inches long. See Plate 2. This wood can then be pointed to any desired width and one end kept wide for the wide strokes, the other end sharpened

plete outfit for general use. If the student intends to specialize in Art work he or she will need a good set of drawing instruments, but this will not be necessary for the beginner.

Gothic.

Originally Gothic letters were letters like the Old English as we know them today. They, like Gothic architecture, were beautifully designed and suggested the groined arch and tracery of some architectural masterpiece of the Middle Ages. Their shading is supposed to have come about in the way the scribe held his pen, or whatever instrument he used.

Our modern Gothic text type is an imitation of the hand made letters of the early designers, but each letter is, of course, of exact size, being cast in the same mold. It would be impossible for the artist or designer to make each letter exactly alike and he would spoil the hand lettered effect if he did so. The charm of the hand made letter is in its irregularity, and for this reason the student should not imitate type forms to any great extent. It is a fruitless task. A better plan is to pen or brush in a good style letter to any given size.

A straight wooden stick may be used, or a quill pen can be made from a goose or turkey quill. If working on a large scale the wooden pen is better, as the end can be made any convenient width and changed at will. One end may be used to make the stems of a uniform width, and the other whittled down to a sharp point to make a fine line if necessary. Gothic plain, "Gothic type" so-called, or plain letters without serifs are quite easily made in this way. They require great care in the drawing as any imperfection is at once apparent, owing to



Plate 8. Modern Roman Letters.

their plain style. This style is called Plain Gothic here, to distinguish between this style and the Gothic Text.

The method of laying out the whole alphabet is illustrated in Plate 4. The student may study this scheme with profit, as it will save much work, and insure the making of a fairly good alphabet. A good plan, if practical, would be to make the letters on a large scale, six inches high, or even larger. In this way the details of each letter may be studied to better advantage.

Roman.

The Roman letter, used in the modern sense, means any of the built up, shaded letters, after the ancient architectural Roman letter style—such as the Colonial letters known to us in type as Caslon, Roman, Modern Roman, etc. There are many modern type faces in Roman style, beautifully designed, their chief characteristics being their legibility, the peculiar construction of the serifs and their graceful lines.

NICE RETURN
Grace and beauty in
type style lend tone
and dignity to every
grade of advertising

Plate 9. Packard Type.

Roman type is used more commonly than any other for book type, and seems to be best adapted for this use. The student need have no difficulty in drawing this style if he will follow directions carefully. Plate 6 illustrates the method of laying out this style of letter. Care should be taken in drawing the serifs of this letter, as they are important and help to give the Roman letter its distinctive style.

Draw carefully, freehand, a complete set of capitals based on the Modern Roman style, as large as possible. Note the construction of the individual letters, the way the serifs and fillets are made. You will see from the accompanying drawings exactly how each letter is made. Study the model carefully, draw in outline and fill in solid with brush and ink.

With the instruments draw carefully a complete set of capitals, lower-case letters and figures, based on the Modern Roman style. Make the capital letters as large as possible, one letter on a sheet of ruled paper, and the lower-case letters and figures in proportion. Lay out each letter in pencil outline, being very careful in the construction of the serifs. Finish with clean pencil outline and erase all construction lines.

Modern Letters.

The modern tendency in type design as well as in

ABCDEFGHIJKLM&
NOPQRSTUVWXYZ
Z 1234567890 45⁵⁰
abcdefghijklmnopqrstuvwxyz
wxyz
1234567890 43⁵⁰

Plate 10. Modern Italic

hand lettered effects, is to strive to create something new. Of course the letter designer is limited to certain conventionalities which he may not violate if he would have his letters accepted and read by the public. We have become used to certain styles of type and letters thru long association with them, and are apt to prefer one style of letter for this job, another style for that—and so we have the Roman as an accepted book type, the Commercial Gothic as an advertising type, etc. The imitation hand-drawn letter is very popular now for the better class of work, but fashions change, and we may see the mechanically made letter back in popular favor again. The Packard type shown in Plate 9 is a good example of the modern hand lettered style.

Italic.

The Italic letter, as the name implies, is Italian in origin, and is said to have been designed after the handwriting of Petrarch, an Italian poet of the fourteenth century. There is no other style of letter so well adapted for sub-headings, display work, and for special words in the body of a page, that needs emphasis. The Italic is a very graceful letter, and the student should have no difficulty in drawing this letter if he has mastered the drawing of the Roman.

Almost any letter may be made Italic if drawn on a slant, but technically speaking, the Italic is a Roman letter made at any angle of from 10 to 20 degrees from the vertical. When laying out this alphabet, first decide

ABCDEFGHIJ
KLMNOP
QRSSTUVW
XYZ&T
abcdefghijklmnop
ghijklmnop
qrstuvwxyz

Plate 11. Script.

at what angle the letter is to be made, then turn the paper on the drawing board to the desired angle, and lay out with T square and triangles as in previous lessons.

Script.

Script letters are simply written letters, drawn carefully, and can be made in any style, like the Italic. The script letter should be made in pencil first and corrected to insure good spacing, then finished with a flexible pen or brush. The student will need to practice many times before becoming proficient, as it is perhaps the hardest of any of the letters to make well. Lay out a sheet of Script letters, including capitals, small letters and figures, as shown in the accompanying plate.

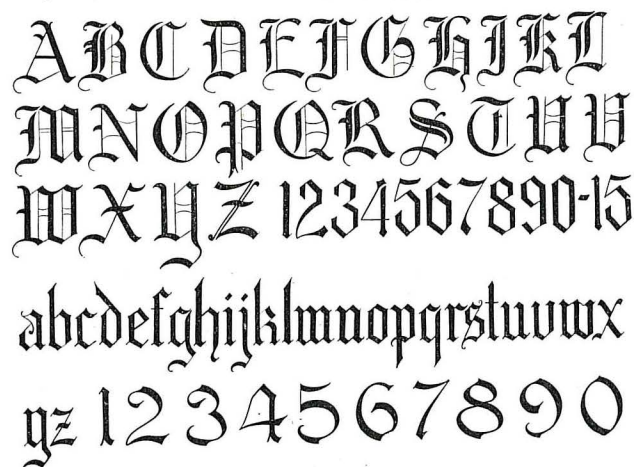


Plate 12. German Gothic Text.

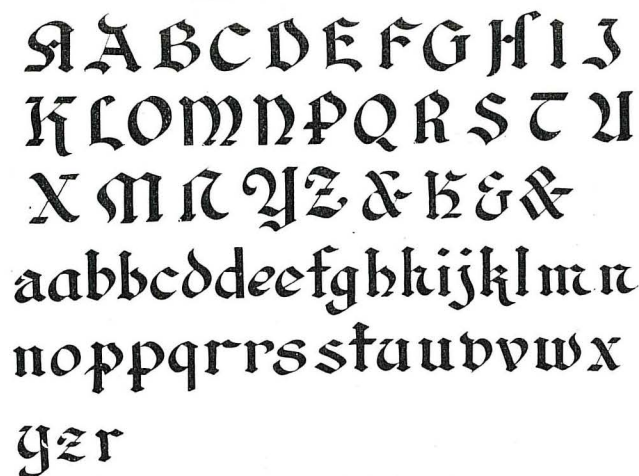


Plate 13. English Gothic Text.

Gothic Text.

Text is a term applied to all forms of ecclesiastical letters such as were used by the scribes and monks in lettering their manuscripts. It includes the Gothic, Old English, German, and French Text letters.

Gothic in modern terms, from the printer's standpoint, means any plain letter without serifs, and Text any elaborate letters, as the Old English, German Text, used mainly in connection with religious literature, or for work needing an elaborate letter, especially for initials.

Uncial Lettering.

The Uncial or majuscule letters, classed in modern usage as Gothic and sometimes called round capitals,



UNCIAL CAPITALS



GOthic LOWER CASE

Plate 14.

were originally pen or brush made letters. They were first used by the scribes, or writers, as early as the first century, and went out of common use about the tenth. Homer's poems, the Scripture, and many of the early manuscripts were written in this style. In its early form the Uncial was a beautiful round letter—legible, and easily made with a pen.

There was no distinction made between capitals and lower-case letters in the old style. Many of our lower-case and capital letters were derived from this alphabet. Altho an alphabet of unusual beauty, the Uncial is little used today except for special work—mainly for initials in combination with text lower-case for cards, etc. It makes an unusually attractive initial letter, especially for illuminating. The name "Uncial" is supposed to have been given to this style by St. Jerome, as early as the fourth century.

Cursive.

Historically the Cursive followed the Uncial and was originally much like this style. The name is not used in modern times but the style is in use and deserves our attention as it was and is a beautifully designed and rapidly made letter. The chief difference between this style and the Uncial is that the Cursive is a written and connected letter, while the Uncial is a drawn and disconnected letter. The Cursive style came into use at about the same time and finally succeeded the Uncial.

This style was first used by the scribes about the first century and continued until about the fifth century. The letter was a round written style, connected, flowing, and no difference in character was shown between the capital and small letter as we know them today; both were used interchangeably. The Roman is supposed to

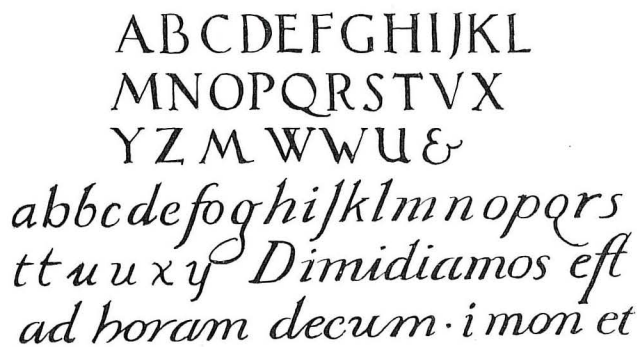
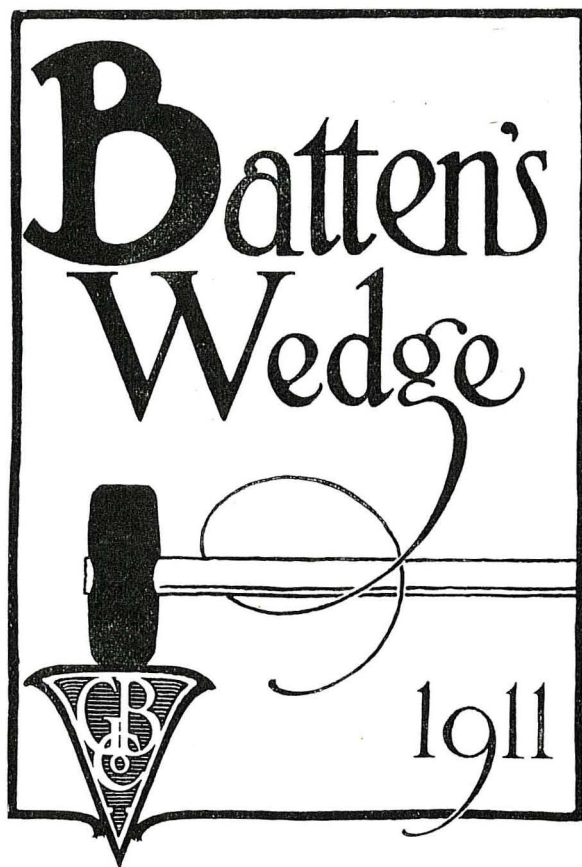


Plate 15. Cursive Writing.

have been derived from this style. In Plate 15 is shown a splendid Cursive pen made style that suggests the easy flow of these written forms of letters. The student could not do better than to acquire an individual style of written letter for lettering any work when necessary based on this Cursive style. Our modern commercial handwriting, both capitals and small letters, are supposed to have been modeled on these letters.

Special Letters.

When designing letters for special jobs, like labels, posters, initials, trade-marks, monograms, headings, advertisements, etc., the designer needs to exercise his inventive genius to the limit. The name may suggest the style, and in that case the letters may be made in any



By permission of George Batten Company, New York

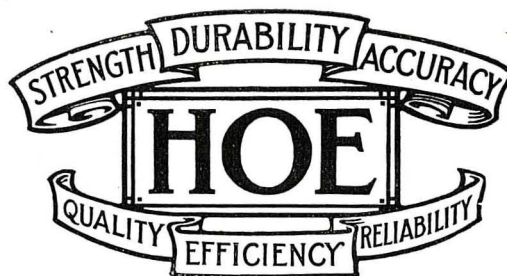
Plate 16. Modern Letters.

appropriate size and shape. Plate 16 is an example of this kind.

A label is wanted, something different from the common run of labels. An idea is suggested by an old one, or may be one seen somewhere. The designer sets to work to evolve a new one. He sketches a number before he gets one to suit him; when he does, he finishes enough to suggest how the finished product will appear, and if accepted, finishes the whole design. A number of good examples of letters designed for special work are shown in Plates 16 and 17.

Initials.

When designing an initial it is a good plan first to decide what is to be the general shape of the design. For instance, it is desired to make an initial inside of a



Double Thick Buckeye Covers

Plate 17. Modern Letters.

rectangle. It will then be necessary to plan the exact size of the rectangle, just where and what size to make the initial inside, and whether the background is to be black, white or patterned. It is now the fashion to make the initial match the border in case a border is used.

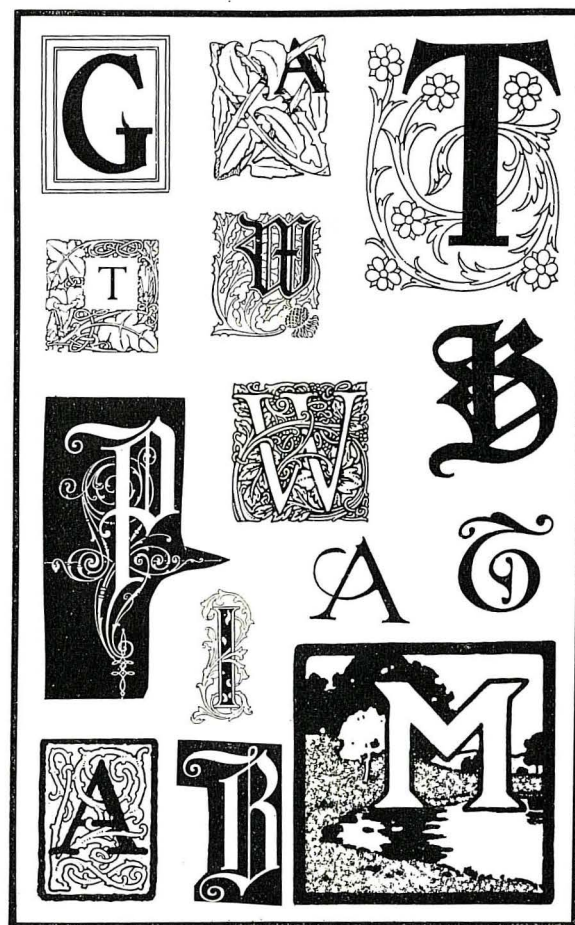


Plate 18. Modern Initials.

To What Extent and How Can a High School Especially in a Small City Teach a Trade Such as Cabinet Making?

W. H. Henderson



HIS report is based upon a series of charts which were submitted at the St. Paul meeting, illustrating the proportion of time in school to be devoted to vocational subjects by various groups of pupils.

It is assumed (a) that the pupil has had shopwork in the elementary school or elsewhere; (b) that he has a fairly definite purpose in attending high school and knows approximately the amount of time which he can devote to his secondary schooling; (c) that he wishes to study cabinetmaking seriously for the purpose of acquiring *marketable skill or knowledge of the craft*.

One issue should be met squarely: Boys under 16 years of age are not desired in industry and placing them there will entail serious economic loss both to the boy and to society. It is, therefore, recommended that

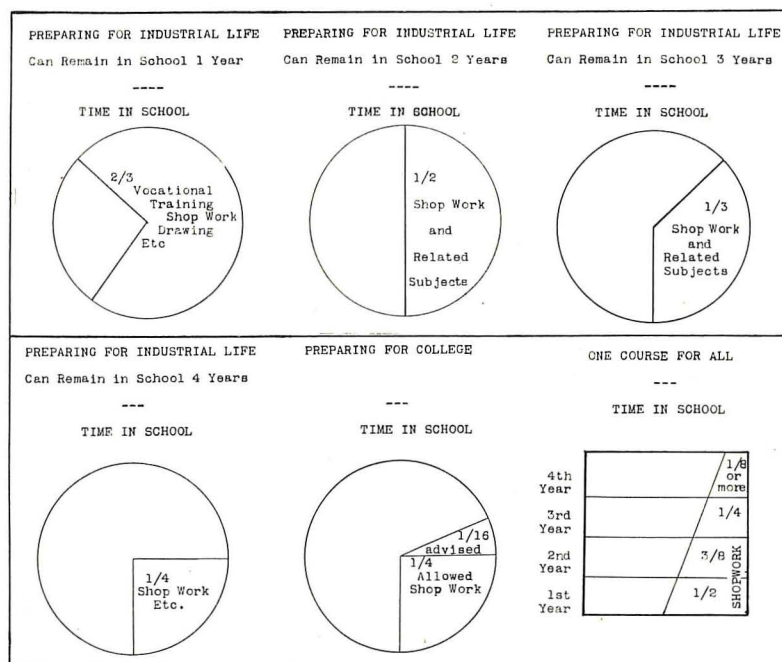
Schedule of Time to be Devoted to Vocational Work by Various Groups.

	One-year course	Two-year course	Three-year course	Four-year course
Periods in school each day	8	8	8	8
Periods each week in shop and drawing..	25	20	15-1st yr. 13-2nd yr. 12-3rd yr.	10
Periods a week in shop	19	16	11-1st yr. 11-2nd yr. 10-3rd yr.	8
Periods a week in drawing	6	4	4-1st yr. 2-2nd yr. 2-3rd yr.	2
Total periods in shop in course	760	1280	1280	1280
Total periods in drawing in course.....	240	320	320	320
Total periods in shop and drawing	1000	1600	1600	1600

In the one-year course, 760 class periods may be devoted to shop work and 240 periods to drawing. In the two, three and four-year courses 1,280 periods may be devoted to shop work and 320 to drawing. The one-year student will have a larger proportion of time devoted to drawing since it is essential that a good mechanic shall be able to read and interpret working drawings, and we have regarded 240 periods as the minimum to be devoted to drawing.

Our purpose is now to present a scheme whereby a high school may attempt to teach a definite occupation to the various groups of pupils in this allotment of time.

The trade or craft of cabinetmaking has been chosen for discussion since woodworking and cabinetmaking is the line of shop work most commonly taught in high schools and is, perhaps, in the greatest demand. It might also be said that it is one of the most difficult trades



Charts Illustrating Proportion of Time Suggested for Various Groups of Students.

no boy under 16 years of age be admitted to the one-year course and that no boy under 15 be admitted to the two-year course.

It is obvious that the first four of these charts are all that need be considered in the present discussion. Interpreting the first four charts in terms of school periods we have the following schedule: It is assumed that the school day is at least six hours or eight 45-minute periods in length and that the school year is forty weeks. In the one-year course we recommend that at least two periods and preferably three be devoted to academic work—English, history, civics, physical training, etc.

to teach in a school since so much of the work must be done on machines, and the trade is so minutely subdivided. The machines used in commercial cabinetmaking contain sharp knives which are revolved at high speed making their operation quite dangerous. In many states persons under 16 are forbidden by law to operate woodworking machinery. This is another reason for not admitting boys under 16 to these courses.

It is not recommended that every high school attempt to teach the cabinetmaking trade, but if the school attempts to teach this trade or craft, this course is recommended as one which will contribute directly and, in no small degree, to the vocational efficiency of the pupils.

In the preparation of the following course in cabinetmaking, I have received valuable help and suggestions from Prof. F. D. Crawshaw of the University of Wisconsin, and from several practical cabinetmakers.

Note—This is a part of the report of the Manual Arts Committee of the N. E. A. Commission on the Re-organization of Secondary Education.

High School Vocational Course in Cabinet Making.

150 hours or Hand woodworking tools, uses and care.
200 45-minute Saw filing.
class periods Joints used in cabinetmaking. Uses and advan-
devoted to tages of various joints, taught by practice in
elementary cabinet construction. Details of
construction such as the making of a joint should be empha-
sized in connection with the application of the details in a
marketable product.

310 hours of Furniture and cabinet construction, drawer con-
415 periods struction and fitting. Door making and hang-
ing. Hardware, trimming and accessories.

Trimming and glazing.
 Shop lay-outs. Bills of stock.
 Production short cuts. Economy of material. Wood carving.

100 hours or Installation, operation and care of woodwork-
135 periods ing machinery.
 Work to be done on each machine.

Adjusting and overhauling of machinery.
 Grinding and setting of knives.
 Lining of shafts.
 Bearings—babbiting and scraping.
 Lacing and gluing of belts.
 Filing and setting of circular saws and brazing of band saws.
 Wood-turning—making of spindles.
 Safety appliances and emergency instructions.

100 hours or Gluing. Making and testing of glue.
135 periods Preparation of stock. Sanding.
 Veneering.

Simple inlay work.

200 hours or Wood finishing.
265 periods Tools—brushes—use and care.
 Stains, water—oil—spirit.

Mixing and application of each class.
 Qualities and uses of each.
 Wood characteristics in relation to stains and finish.
 Fuming.
 Uses and composition of fillers.
 Use of shellac—French polishing.
 Varnish and its use—rubbing—polishing.
 Uses of wax and oils.
 Formulae and uses of varnish and filler removers.

100 hours or Simple upholstery and caning.
135 periods Materials, tools and processes.

Necessary Machine Equipment.

The following machine equipment is the minimum required for teaching the elements of cabinetmaking: Band saw—Universal saw table—Jointer—Grinder—Foot power mortiser—Planer—Lathe—Foot power shaper.

Desirable additional machines: Boring machine—Power mortiser—Sander—Swing cut-off saw.

Division of time The division of time for each group of subjects, or processes, is merely suggestive and is not given as a fixed amount of time. It seems, however, that this proportion is fairly correct.

Product For use in the schools the following articles may be made in the school shop: Tables, desks, book cases, costumers, laboratory cabinets, chairs, home economics equipment, and tool cabinets.

Wood finishing, upholstering, and wood carving may be considered as trades in themselves, and in the one-year course, these may be omitted. If, however, the student shows a decided preference for one of these lines of work, it might be well to allow him to specialize in it.

We do not agree with those who believe that the best method of training a mechanic is to place him at manufacturing a commercial product with no system-

atic instruction whatever. We see on every hand evidences of the inefficiency of instruction of that character in the shops. We do not feel that there is essentially any educational value in the mere manufacture of a marketable product. If the making of a commercial commodity is of such great value educationally, why the objection to the factory as a place for educating growing children?

Instruction should accompany the introduction of each new process. By this we do not mean a series of abstract exercises, and neither do we mean the total exclusion of exercises. To illustrate: If any of us wished to learn to wipe a joint in order to install a bath tub in our homes, we would not attempt at once to learn joint wiping by wiping the joint required in the installation of the tub. We would not expect the first attempt to be an unqualified success and if we did, we would be disappointed. We would probably take two pieces of scrap lead pipe and do our practicing on the scrap material. When we had become sufficiently expert, we would then apply what we had learned to the commercial job. This same method should be followed in the making of wood joints. When it becomes necessary to use a mortise and tenon joint in the construction of a cabinet or other piece of furniture, we should have an exercise on mortise and tenon joints.

The same method should be used in teaching drawing. The drawing should be taught by the making and reading of simple shop drawings, in preference to the exercise or copy methods. Drawing has been called a universal language, and in the teaching of a language we do not begin by teaching the use of punctuation, capitalization, rules of syntax, etc., but we give the pupil a vocabulary by reading and speaking simple compositions. We do not expect the beginner to learn to read by repeating unintelligently a masterpiece. So in drawing, we should first give the vocabulary of shop drawing practice by having the pupil use the conventions of drawing in the making of simple shop drawings.

We do not maintain that a boy completing this course will be graduated with sufficient skill and experience to immediately enter industry as a journeyman cabinetmaker, but he will be able to immediately earn a good living wage, that is, from twelve to fifteen dollars a week, and will be able to advance to complete journeyman-ship. This boy will be in a position to help himself to advance to higher and better positions than the job he takes immediately after completing this course.

High schools cannot and should not expect to graduate journeymen, able at once to occupy the highest positions possible for a mechanic to fill. Our graduates should develop and advance for years after completing their schooling, and should always be preparing themselves for the "next" promotion. We do not want to place them at the top of the ladder with nothing to aspire to, but we should place them on a ladder with the ability and the ambition to climb up.

The American Association of Achievement

Grace Viall Gray



IN the summer of 1914, Harvey Brooks, a 15-year-old pupil of the Morton Grove School in Cook County, Ill., made \$200 on 15-16 of an acre of land, rented from his father. In addition to his work outdoors he made both seventh and eighth grades in one year. He lost one year of school being confined to a hospital with an injured limb.

This ability to make money on a small piece of ground and to do "extra well" in school is the opportunity of every little country boy and girl who goes to school in Cook County, Illinois.

There is a clever superintendent in that county who thought of the achievement idea for his boys and girls. The achievement buttons which adorn the proud young persons in Cook County are symbolical of hard work with brains and hands and of unusual ability in some one line. When girls and boys are able to do some one thing very well, they like recognition and this is what Cook County is doing—it is recognizing latent talent and uncovering it; it is giving credit where it belongs and is upholding a beautiful standard to the school children of its county.

In every school there are pupils who give evidence of great ability in some things. Some have remarkable talent in music or art; some in science; some in agriculture and some in books.

Cook County felt that some form of encouragement should be given to such boys and girls; perhaps in the way of public recognition; perhaps by personal and financial assistance, that they might develop their talent and ability.

As a result of deep thinking on the part of those interested, the plan grew and grew until finally it was thought best to perfect a regular corporation, to secure the co-operation of a few of the nation's great men, and then extend the work not only to the entire State, but to every state in the Union, and with this thought in mind, the American Association of Achievement came into existence.

There are many badges being worn now in Cook County altho the movement is still in its infancy and still wearing long dresses. An emblem, which serves as the official badge of the Association consists of a four-pointed gold star, the points of which are connected by a circle. The star has eight holes, four of which are in the points of the star, four are in the circle midway between the points. The letters A. A. A., which appear in the center of the star, refer to the American Association of Achievement.

The symbolism of the medal is beautiful and means a great deal to the boys and girls winning one. The four points of the star represent the four points of the compass, bounding the field of achievement, the star itself representing the star of hope, the promise of achievement. The circles which join the points of the star are

symbolic of the circle of life. The small silver stars when placed in the holes of the emblem represent the fulfillment of promise, which is real achievement.

When a boy or girl earns the right to it, the emblem is granted. When further achievements have been accomplished and recognized, additional units, each represented by a silver star to be placed in one of the holes, will be granted. When five units—i. e., the medal and four stars, have been granted, a certificate issued by the Association and signed by the governor of the state in which the recipient lives may be granted. After four additional silver stars have been earned a small diamond to represent the tenth achievement will be set in the center of the star. A certificate of achievement to be signed by the President of the United States may also then be issued. It will take a long time to earn the diamond and the President's signature, but all the children in Cook County already have their eyes and hearts fixed on that goal.

Frederick W. Lehmann of Cicero, Ill., a boy of only 15, has won his medal and has five stars to his credit for his unusual mechanical and manual ability. This is what Frederick has to say for himself:

"When 8 years of age I became greatly interested in some handmade articles built by my brother. With money saved by myself I bought a scroll saw and began cutting things from patterns.

"At 10 years of age I started going to the Goodwin school. Two years later I took up manual training and from a plan I had seen in a newspaper I began the construction of a motor boat, which I finished in two months. It was 18 inches long and driven by an electric motor, the power coming from a dry battery which I installed. This boat sailed along in the water like a big boat.

"The year after this, having seen in a daily paper several photographs of aeroplanes, I cut them out and built several rude models. Laying aside for a time the building of aeroplanes I built myself a reflectoscope which will show on a curtain pictures eight by four feet. It is equal in every way to any reflectoscope to be found in the stores of Chicago.

"In 1912 the Cicero Aviation Field was established three-fourths of a mile from my home. While watching the aeroplanes flying nearly every day during the summer, I built several models. Some of these worked with success. In four weeks' time I completed a perfect model of a Bleriot French type monoplane. It is two feet long, has aluminum wings, Bell steering wheel control, spring landing gears, pneumatic rubber-tire wheels, and is propelled by a Gnome electric air-cooled motor, which drives a twelve-inch propeller.

"Before I was 15 years old I built a complete perfect model of a thirty-foot launch for our manual exhibit. It took four weeks to build. It is four feet long, weighs 35 pounds, has regular steering wheel control,



This picture tells the story of two boys who "won out" by their own determination. A Community Fair was being held in their district, but all the men were so busy that they couldn't find time to take chickens to the Fair. So the boys solved the problem by hitching their dogs to their Play Wagons and Hauling the Chickens to the Fair Grounds. You will notice the boys won ribbons.

carries three dry batteries and has an electric motor which drives a propeller one and one-fourth inches in diameter. This boat is covered with sheet steel and all seams are soldered together. It has an electric searchlight, electric foghorn, is equipped with automobile top, and carries a life belt. All woodwork is varnished, and the outside is painted in black, white, red and gray.

"When I was 15 years old I built a model of a New York Central electric locomotive. It is twenty inches long, has two electric headlights, and runs by either the third-rail system or overhead trolley. The trucks under the engine turn to an angle of thirty degrees to enable it to make short curves.

"I have now two things under construction. One is a wireless station for which I have built a house five by five feet and eight and one-half feet high, in which I have installed a receiver capable of receiving messages from 800 to 2,000 miles.

"The other is a motor bob, fifteen feet long, equipped with a steering wheel and five-foot propeller, driven by a four cylinder, forty horsepower gasoline engine. The sled under the engine acts like a rocker, absorbing the severe shocks."

Rossiter Llewellyn of La Grange, Ill., and only 12 years old, has been editing and publishing a small newspaper, which has a good circulation. He has newsboys on the streets selling his paper and it is very amusing to hear him tell about his "help problems." He has strikes among his helpers, especially on football days.

Rossiter sets his own type and does his printing, using type and presses bought with money he earned. As a result of his endeavor he is wearing an emblem with five stars.

George H. Grosse of Orchard Place, Ill., has won two stars. He has this to say about his Achievement:

"Last spring I rented an acre of land, it being a piece of old, heavy, black bottom land.

"The top soil was about fourteen inches deep. The subsoil was a dark bluish clay.

"Potatoes had been grown on this acre the year before. It had been sod for many years, and had been drained several years ago.

"In preparing this acre for corn it was plowed, using a Rock Island plow, as no other plow would scour in this heavy black soil. I harrowed it four times, thus making a fine seed bed.

"I used no manure or fertilizers.

"I purchased Golden Beauty seed corn from an eastern seed house.

"On testing the seed I found it to sprout 97 per cent.

"The corn had been planted by hand on May 20th, in check 42 inches square, putting three kernels in each hill about three inches deep. The corn came up in twelve days, the stand being very good considering the dry weather which prevailed during planting time.

"When the corn was about four inches high I cultivated it the first time, using a Bradly cultivator. Have cultivated it altogether four times; lastly, when it was about five feet high. I also hoed it twice.

"The stalks were quite high and thick, averaging twelve to thirteen feet in height, and covered with abundant foliage.

"I gathered the corn November 12, 1913, finding I had raised 116 bushels to the acre.

"I belonged to the Cook County Achievement Corn Club, and after sending in my report I was awarded the sweepstake county championship, the prize being a free trip to Washington, D. C., to stay for a week, which was very much enjoyed.

"On arriving there I met nine other county winners of the state of Illinois. After each of the winners' reports was examined it was found I also was the head of all the contestants from Illinois.



Boys and Girls like to do their Canning outdoors. This shows some of the Cook County Girls with a Mother starting Preparations for a Canning Lesson Outdoors.

"Here I met boy and girl club winners from thirty other states. Here I was presented a diploma by Secretary Houston given by the United States Department of Agriculture.

"The expenses of this trip were paid by Congressman Frank Buchanan of the Seventh Illinois District, in which I reside.

"The cost of plowing, harrowing, planting, hoeing, cultivation and gathering of corn was\$14.50
 "Rent and seed..... 5.75

Total cost\$20.25

"Value of 111 bushels of common corn @ 70c 77.70

"Value of 5 bushels of seed corn @ \$2.00.... 10.00

Total value of corn.....\$87.70

Less cost of producing corn..... 20.25

Profit\$66.45

"\$20.25 divided by 116 equals 17½ cents, cost to produce one bushel of corn."

One of the girls secured a vacant lot and raised and sold asters and sweet peas amounting to \$42.75; saved \$29, placing it in savings bank in her own name. This industry and thrift is certainly worth recognizing.

Another girl received one first and two second premiums for the best exhibit of canned surplus products raised in her own garden and canned by her during vacation.

So you see the Association gives rewards for many different things from organizing an orchestra to growing good corn. The object of this wonderful movement is to help the boys and girls to develop the talents that God gave them.

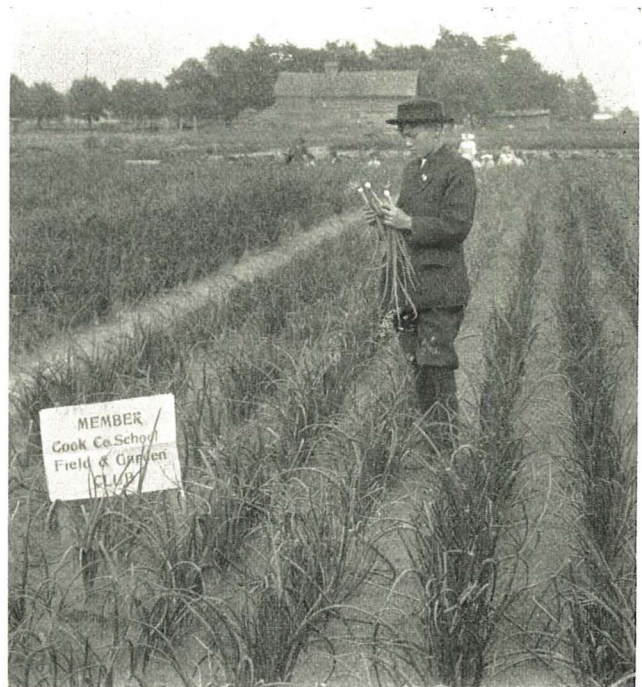
Other Achievements Recognized.

Geatano Guorino, Melrose Park, Ill., was granted three achievements—the first for saving money earned by himself and paying off mortgage on parents' home; second and third achievements based on social service shown by leadership of movement which resulted in the presentation of a statue of Columbus to the school which he attended.

Arthur Jorn, Oak Lawn, Ill., was granted two achievements, the first for trapping skunks; made \$26.85 in one season; bought a bicycle for \$25. Two achievements granted for raising an excellent acre of corn in the Cook County Achievement's Corn Club Contest.

Edward Henry Stachel, Glencoe, Ill., age 13, was granted two achievements, the first because of earning \$60 as golf caddy, which sum was turned over to his mother. Second achievement because of designing and constructing 15-foot ice box.

Theodore Seegers, La Grange, Ill., age 16, was granted three achievements, the first based on unusual ability and industry shown in the conduct of his father's farm. Second achievement granted because of unusual presence of mind and heroism displayed in stopping runaway horse and also in driving burglars from prem-



A Cook County School Boy in his onion patch.

ises. Third achievement granted because of skill in photography.

George Platnichky, Forest Park, Ill., was granted two achievements, the first based on excellence in playing violin, the second for industry and thrift. He ran a candy store for two years while in school, using the money to pay his way thru school.

Wallace Sale, Cicero, Ill., age 14, was granted two achievements, the first because of remarkable initiative, the second because of industry and thrift. Has earned and saved \$75, which he placed in a savings bank in his own name.

Harold Vaillancourt, Maywood, Ill., was granted two achievements, based on initiative, industry and thrift. Has bought his own clothes for three years. Is learning to be a moving picture operator. Has a substantial bank account.

Harold Walker, La Grange, Ill., age 14, was granted four achievements, the first based on general initiative in planning and finding work; second and third achievements granted because of earning money, caddying, cutting lawns and making golf clubs. Saved \$250. Fourth achievement granted for constructive ability.

Walter Gallagher, Harvey, Ill., was granted two achievements, first based on initiative, the second on industry and thrift. Is unusually helpful around home. Has earned some money by outside labor.

Illustrations of Other Achievements.

Boy, age, 16 years:

Wired farmhouse thruout, bought second hand dynamo, repaired and connected it with gasoline engine used in barn; works successfully, furnishing abundant light for home. Elements recognized: Initiative, industry.

Boy; age, 14 years:

Learned during year to play snare drum; now playing three nights and Saturday afternoon of each week, for which he receives \$9; buys his own clothes and other necessities, and is putting balance in bank for future needs. Elements recognized: Industry, musical ability, thrift.

Boy; age, 14 years:

Rented acre, bought seed corn, tested same, planted

it and made net profit of \$52; bought violin, and is now paying remainder for music lessons. Elements recognized: Industry, thrift.

Boy; age, 14 years:

With money he had saved bought second-hand lumber, built pigeon house eight by ten feet; during season sold squabs to the value of \$23.90, besides supplying some for home use. Elements recognized: Initiative, industry.



This girl and her Mother are both exceedingly interested in tomato growing. The girl has trellised her tomato plants while the mother who is competing with her daughter, has her plants at the back of the plot using no trellis. The girl scored over her mother by having bigger, finer tomatoes.

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INDUSTRIAL ARTS DESIGN

ENRICHMENT OF THE CONTOURS OR FUNCTIONAL OUTLINES OF WOOD

William H. Varnum, University of Wisconsin

(Fifth Article)



NEED and Value of Enrichment. A critic of furniture designed by the average manual arts student stated frankly that while it might have been honestly constructed it was, in the first place too heavy for a woman to move about the house and in the second place it represented a decidedly uneconomical use of that valuable material, wood. That there is a basis in fact for this statement cannot be denied. Is it true, then, that furniture must of necessity be clumsy and heavy when it is sufficiently simplified in constructive processes for school work? We may say emphatically, "No!"

One may correct the proportions of an object and reduce the size of the materials in it to a minimum but still fail to secure the desirable elements of lightness and interest. The object may still *look* heavy and remain a box-like structure void of the grace synonymous with the best in design. It is likewise possible to correct the clumsy and heavy appearances by imparting to the design elements of grace and lightness. Two methods may be used, singly or together: (1) Enrichment of the Functional Outlines or Contours; (2) Surface Enrichment sometimes called Space Filling. These may be roughly classified respectively as three and two dimension enrichment.

The first or outline enrichment concerns itself with the structural lines and as all designing processes should start with the structure, it will be our policy to follow this plan. The present article will deal only with enrichment of outlines of wood projects.

Direct Purpose of Enrichment. It is the purpose of enrichment to add (1) grace; (2) lightness; (3) variety; (4) unity to the problem. If it is applied in a proper manner it should likewise add to the apparent structural strength. We should carefully guard the design, therefore, against (1) enrichment that has a tendency to obscure or destroy the structural lines, in other words, enrichment that is not subordinated to the structure, and (2) enrichment that adds nothing to the structure by its application, that is, it does not increase either the apparent strength or the beauty of the object.

As an example of this first point, we have seen the turned candle-stick with the candle supported by a stack of turned balls alternating with doughnuts or thin discs tending to completely obscure the sense of support. The landscape gardener feels that he is violating a fundamental principle in design if he plants vines to grow around a building until the foundation is obscured and the roof apparently rests on and is supported by the stems and leaves of the vines. Thus it is seen that the eye registers a sense of structural weakness when the main supports of an object disappear and are no longer to be traced under the enrichment.

Under the second point falls the indiscriminate placing of unrelated objects in the contour enrichment.

Naturalistic objects similar to the claw foot and the human head for example should give way to natural curves that add to the appearance of total strength. Where are we to find these curves suited to our purpose?

Valuable Curves for Outline Enrichment. Up to this point, this series of articles has placed emphasis upon straight and curved lines immediately connected with pure service. For grace and lightness, it is necessary to depart at times from the rigidity of straight lines. To understand the character of this departure, let us consider a simple bracket as a support for a shelf.

This bracket acts as a link, connecting a vertical wall or leg with a horizontal member or shelf. A shelf shaped like a 45 degree triangle, Figure 10*, gives one the sense of clumsiness. If the feeling of grace is to be imparted, the eye must move smoothly along the outline of the bracket giving one a sensation of pleasure. A curved line will produce this effect more completely than will a straight line. One must likewise get the feeling that the curve of the bracket is designed to support the shelf.

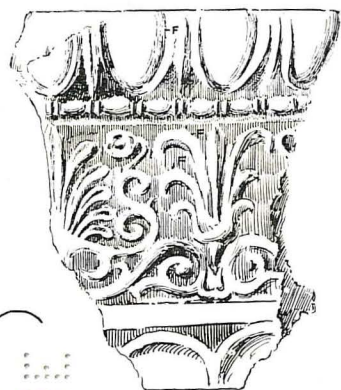
Turning to Figure 70, Plate 19, we find that whenever nature desires to support a weight she is inclined to use a peculiar curve seen at "F." Possibly thru continued observation the eye has associated this curve with strength or supporting power. Figure 71 has detailed this curve. It is found to consist of a long, rather flat portion with a quick and sudden turn at its end. The curve is known to designers as the Curve of Force and is most valuable in all forms of enrichment. Designers even in early ages have used it in some form as will be noted from the fragment of Greek sculpture in Figure 72. Its beauty rests in its variety. A circle has little interest due to its rather monotonous curvature. The eye desires variety and the curve of force administers to this need and gives a sense of satisfaction. As designers on wood how are we to utilize this curve for purposes of outline enrichment?

An Approximate Curve of Force. For approximate similarity of curvature an ellipse constructed in a manner similar to Figure 73 will be found convenient. By drawing several ellipses of varying sizes upon sheets of tin or zinc, a series of templates of utmost practical value may be formed and used as indicated in Figures 74 and 75. If the rail or shelf is longer than the post, measured downward from the rail to the floor or next shelf, the ellipse should be used with its major axis placed in a horizontal position (Figure 75). If on the contrary, the post is longer than the shelf the ellipse should have its major axis in a vertical position (Figure 74). Figures 76 and 77 are other instances of the use of the approximate curve of force. Many similar practical applications will occur to the designer.

Mouldings. We have classed the bracket as a link

*February Magazine, page 57.

NATURAL AND GEOMETRIC CURVES WITH THEIR USE IN FUNCTIONAL OUTLINE ENRICHMENT



A GREEK FRAGMENT
FIG. 72.

FIGURES 70 TO 72 REPRESENT THE CURVE OF FORCE AS SEEN IN NATURE AND ORNAMENT "F".

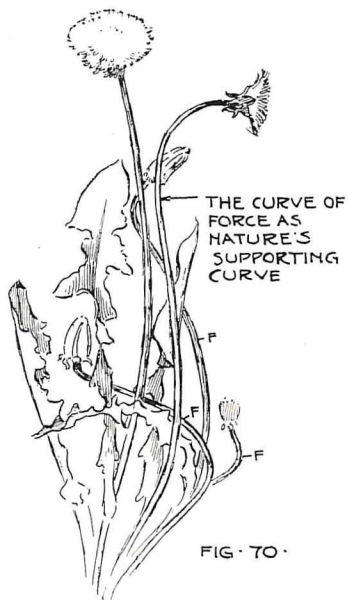
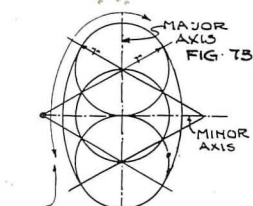


FIG. 70.

FIG. 71
THE CURVE OF FORCE



AN APPROXIMATE CURVE OF FORCE

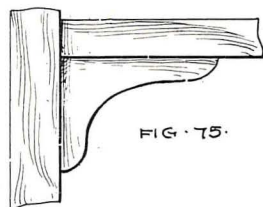


FIG. 75.

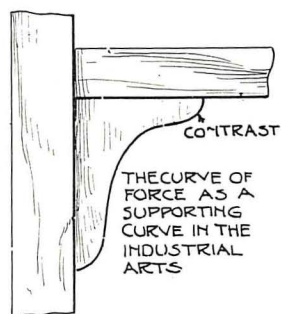


FIG. 74.

APPLICATIONS OF THE CURVE OF FORCE

FIG. 76 ILLUSTRATING ECHO OF SIMILAR CURVES AT "E".

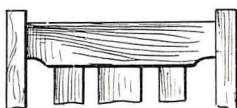


FIG. 77.

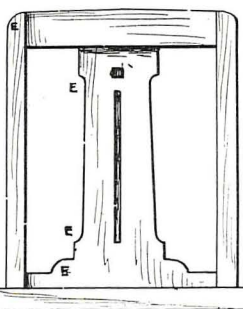


Plate 19.

ENRICHMENT OF THE CONTOUR OR OUTLINE BY MOULDINGS APPLIED TO WOOD... TYPES OF MOULDING... WOOD TURNING PROBLEMS

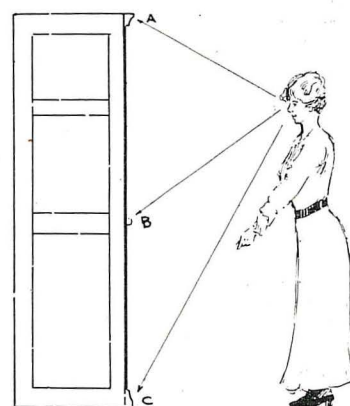


FIG. 78.

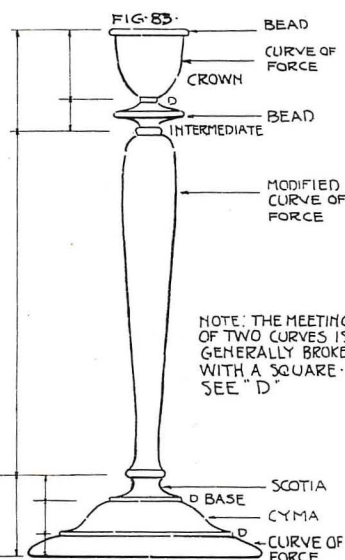
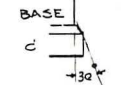


FIG. 83 REPRESENTS A CORRECTLY DESIGNED CANDLESTICK WITH OUTLINE ENRICHMENTS GROUPED IN ACCORDANCE WITH RULES 2 A AND B. FIGURE 84 IS A TYPICAL FAULTY DESIGN VIOLATING PROPORTIONATE GROUPING AND CONTINUITY WITH LACK OF CONTRAST

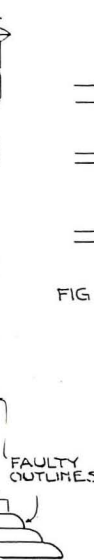
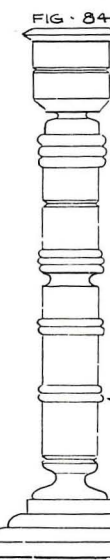


FIG. 82. CURVES

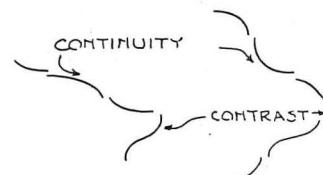


FIG. 80. PRACTICE CURVES

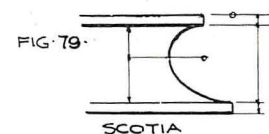
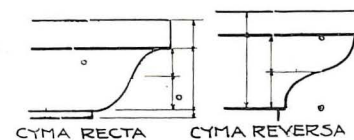


FIG. 81. CONTINUOUS CURVES

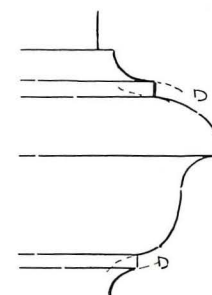


Plate 20.

connecting a vertical and horizontal structure. Mouldings may likewise be considered as links connecting similar horizontal or vertical surfaces by bands of graded forms or shades. Inasmuch as they affect the outline they are considered in this article. As the mouldings are to assist the eye by easy steps to make the jump from one surface to another, the position from which the mouldings are to be seen has considerable effect upon their design.

Figure 78 shows the relation of the spectator to three types of mouldings at A, B, and C. The top of crown (A) is to be seen from below. On a large project the angle of the mouldings should project approximately at 45 degrees from the body of the object. The intermediate moulding (B) is lighter than the crown and forms a transitional link that may be seen from either above or below. The base board or mouldings (C) is the widest member of the group as demanded by our sense of stability. It is seen from above. Both for sanitary and structural reasons it projects but slightly from the base. With this grouping in mind, it is needless to say that a faulty moulding is one, some portion of which, hidden by intervening moulding, may not be seen by the spectator.

Architectural design and history have formulated a series of curves geometric in character, that are regarded as standards in the Industrial Arts. Some of the more prominent curves with their constructions are shown in Figure 79. The horizontal divisions are analyzed in accordance with Rules 2a and 2b. It is noticed that the Scotia possesses a curve having the shape of the curve of force while the two Cimas are saved from monotonous division by means of their reversed curves illustrating the contrast of direction. The curves of Figure 80 are excellent lines for freehand practice in designing mouldings and will develop the principle of continuity of curvature or the smooth transition of one curve into the next.

Continuity and Contrast. To keep this continuity from the monotony of a Marcelle Wave it is customary to break continuous curves by a square as shown at D, Figures 81, 82 and 83. When the desired outside diameter has been reached, contrast of direction is necessary and pleasing as a return. (Figure 82.) A glance at the curves so far considered will quickly determine whether they are fitted for the crown, intermediate or base mouldings.

Grouping of Moulding Curves. Application of these curves to outline enrichment for wood turning projects is to be governed by a strict adherence to Rules 2a or b or confusion and lack of unity will result. Figure 83



Fig. 85. Modern Candle Sticks.

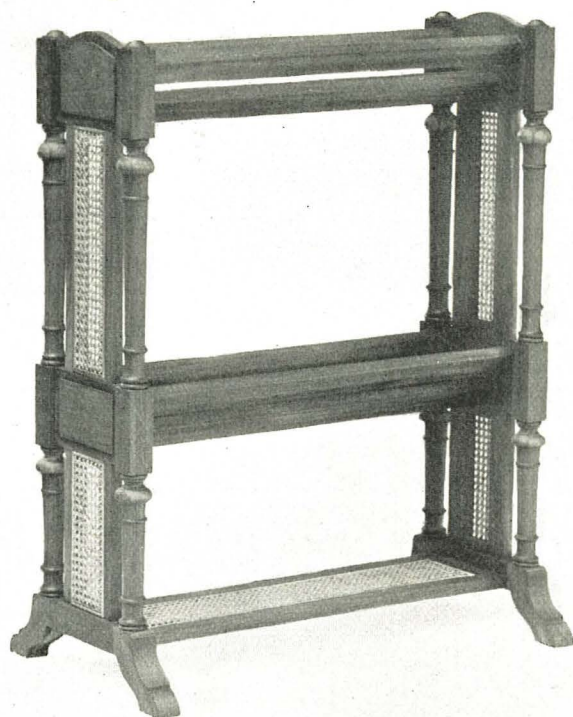


Fig. 86. Book Trough. Courtesy, Berkey & Gay.

shows a major grouping under 2b with the subdivisions and minor mouldings arranged under 2a and b. Figure 84 shows a disregard for this rule and the result is an undesirable monotony of contour. If the smooth and even continuity of curvature is used as the foremost thought, governed by a systematic grouping and variety, a pleasing result from wood turning, (a much abused but pleasing form of outline enrichment) may be secured. Figures 85 and 86 are illustrations from the industrial field with moulding curves grouped, following and supporting the structural lines of the object. The columns in Figure 86 might, however, be advantageously reversed.

Large objects designed to be seen from a distance require larger space divisions for their mouldings than small objects seen from a nearer point. Material affects the curve somewhat. Smaller mouldings are more suited to the expensive woods like mahogany while larger curves may be used in pine or oak.

Evolution of an Enriched Outline Design with Variations. We now have at our command a number of interesting and serviceable curves suited to the material. Plate 21 is a sheet of applications. Figures 87 to 94 deal with the book-rack end and in this as in the initial article of this series, architecture was referred to as the source of many laws of Industrial Design. It has seemed wise to illustrate some of these important parallels as follows:

We will assume the type of joint construction of the book end as settled and the question of enrichment to be under consideration.

Figure 87 is a simple primary mass without enrichment. It is comparable to the plain box-like structure with monotonous outline and without interest. The eye

follows the outline in the direction of the arrows, pausing at the square corners, interrupting a free movement by a harsh right angle. The base (an appendage) repeats in each instance the changes of the primary mass.

Figure 88. Round corners by freeing the design from the right angles, accelerate the smooth eye movement and give a sense of added interest and grace.

the interest centered at the top of the pediment (x), causes a similar concentration of interest in the book-rack end. The slight inclination of the sides supply variety of widths. The architect considers an object with the interest centered in this manner in the upper portion, as possessing more individuality than a motive with a purely horizontal line across the top boundary.

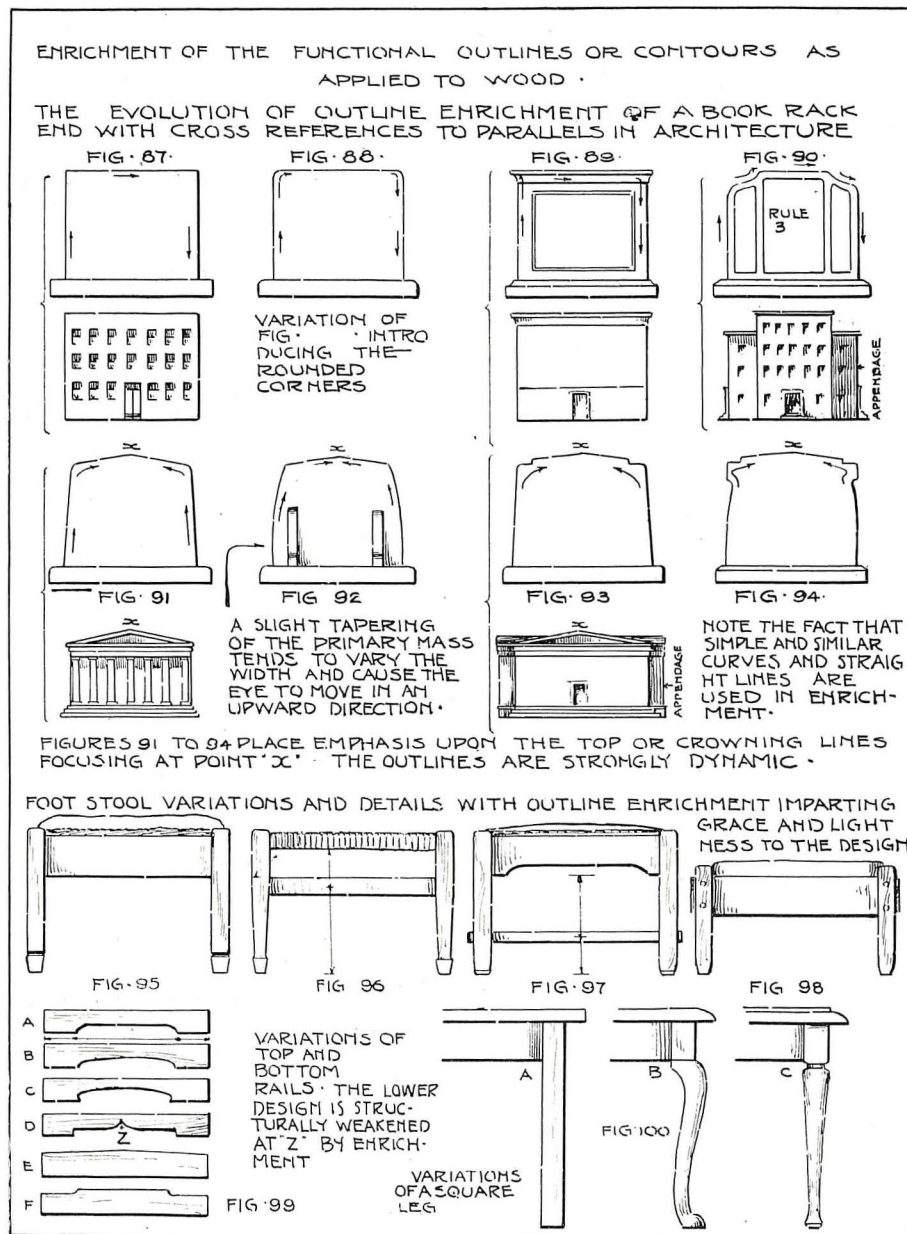


Plate 21.

Figure 89. The cornice of a building suggests a similar arrangement which may be added to the primary mass. It adds the element of contrast of direction and variety of widths.

Figure 90. The main primary mass of a building with two equal appendages will suggest the enrichment of the outline in sympathy with three vertical divisions (3b). The rounding corners again assist the eye to travel freely around the contours, thus giving a sense of unity to the entire form.

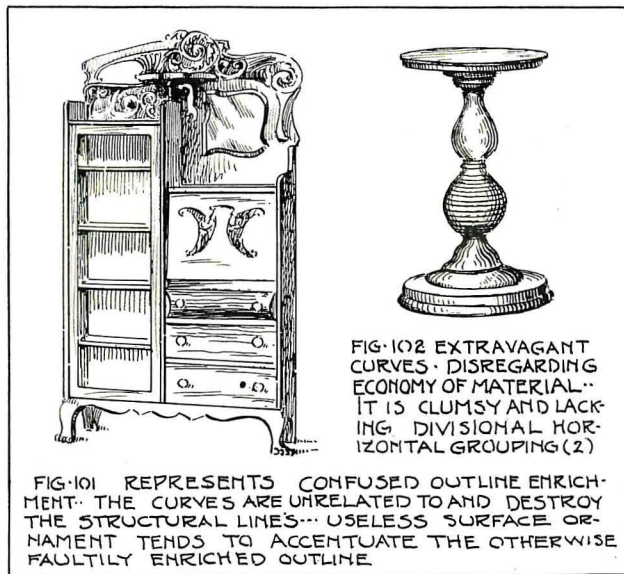
Figure 91. The pediment of a Greek temple with

Figure 92. In this figure the curved inclination facilitates the upward movement of the eye at the same time supplying variety of width.

Figure 93. The addition of an appendage to the Greek temple suggests a slight drop or variation to the top edge, giving an added element of interest and grace thru added variety.

Figure 94. Contrast of direction supplies this suggestion but it is questionable whether we are adding much to the interest by this addition.

Figures 95 to 98 are variations of one theme, the



Figs. 101-102.

foot stool and Figure 99 adds suggestive designs for rails. D in Figure 99, shows the enrichment line cut in to a depth which threatens the structural value of the rail which is shown as corrected in Figure 103. Figure 100 is an application of the curve of force to a chair leg (B), with other possibilities at A and C. (Prang's Manuals.) Numerous applications of the varied curves under consideration are found thruout this sheet.

Curves of Extravagance—Loss of Structure. Before closing with enriched outlines it is well to consider flagrant violations of this enrichment now on the market. Figure 101 shows a typical example with complete lack of unity and simplicity and is a type of design often associated with cheaply constructed furniture. It is an



Fig. 103. A Modern Telephone Set. Courtesy, Berkey & Gay.

ornate parody on outline enrichment. The curves of extravagance are well shown in Figure 102 where large bulbous curves with no systematic grouping combine disastrous waste of material with lack of grace or lightness. It is excellent practice to redesign 102, grouping the curves under Rule 2b.



Fig. 104. A Modern Chair. Courtesy, Berkey & Gay.



Fig. 105. Serving Table. Courtesy, Berkey & Gay.

Rules for Outline Enrichment.

5a. Outline enrichment should be subordinated to and support the structure.

5b. Outline enrichment should add grace, lightness and variety to the design.

5c. Outline enrichment, by its similarity, should give a sense of oneness or unity to the design, binding divergent members together.

Illustrations from the Industrial Field. Illustrations 103 to 106 are typical forms of outline enrichment. Limitations of space will not permit reference to the use of Period furniture. Sheraton and Hepplewhite designs are most suggestive as may be seen by comparing the Sheraton desk (Figure 106) with the foot stool in Figure 96. The next article in this series will deal with the outline enrichment of metal and clay objects.



Fig. 106. A Sheraton Desk. Courtesy, Berkey & Gay.

COSTUME DESIGN AND ILLUSTRATION

Ethel H. Traphagen

(Sixth Article)

WASH.



ASH is a very useful medium for fashion work, especially where photographic effects are desired, as for instance in catalogs. In newspapers it is not so often used as in magazines and catalogs because the poorer paper on which the newspapers are printed does not tend to successful reproduction.

For magazines just as there are different ways of using pen and ink, so there are three kinds of wash, the illustrative, the pattern and the advertising. These again can be divided into different styles of work, as the usual, the sketchy and the decorative. Still again, there is pure wash and there is wash combined with pen and ink or crayon.



Fig. 52. © Harper's Bazar.

In the illustrative type most attention is given to the attractiveness of the picture. See illustration Number 52.

In the pattern type most attention is given to the seams and the way the garments are made, and less to the expression of any particular kind of material, in other words the textural and pictorial sides are subordinated to the practical pattern. This can be done, however, in an attractive way. See illustration Number 53.

In wash for advertising, attention is concentrated on presenting the garment to the best advantage, bringing out its best features and its textures. This is usually done in a sketchy, artistic manner, the wash combined

with pen and ink. See illustration Number 55. Yet sometimes it is very much finished and approaches catalog work in effect; in fact, sometimes the same drawing which has been used in a catalog is also used to advertise in the magazines.



Fig. 53. © Criterion Magazine.

Wash for catalogs is usually very much finished and often done without or with but little addition of pen and ink. See illustration Number 56.

These drawings are made with the intention of advertising the garments illustrated and for that reason great stress is laid on the materials and details.

The materials used for wash are usually Steinbach or Curtis Board (Illustration Board), but for magazine wash, kid bristol and sometimes even smooth bristol when only a light wash is desired. You will find it good to have Winsor and Newton's Lamp Black and four brushes. Numbers 3 and 4 and 6 and 7 are suitable. You should also have a blotter, some rags, a sponge for washing off all the color if a mistake is made, and a large white saucer for mixing black.

Most satisfactory results are obtained by having your figure and garment very carefully drawn first, then putting in your darks, or shadows, and after these darks are absolutely dry, your large washes. Give very careful study to the texture and the folds.

It is well when beginning to get some very good drawings showing examples of the material you are endeavoring to express. Observe how each material is affected by light and how the light looks on the folds. See for example how in shiny black silk the dark side



Fig. 55. Courtesy, Cheney Bros.

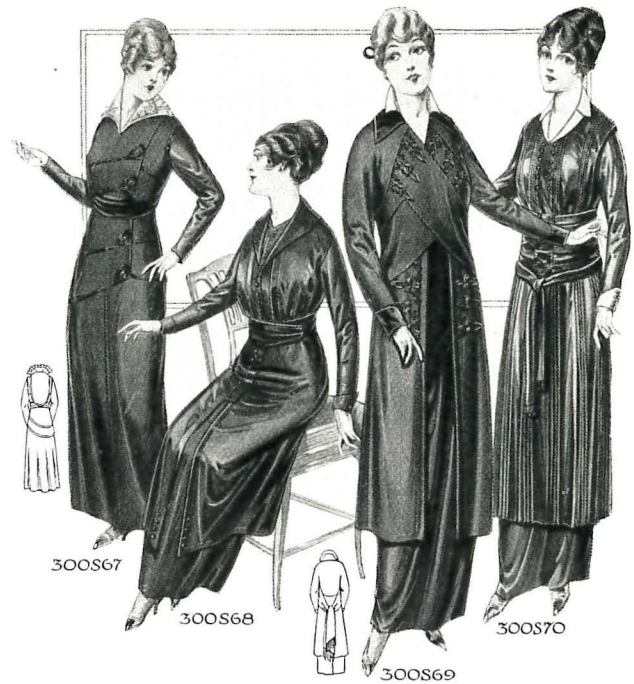


Fig. 56. By permission, John Wanamaker.



Fig. 54.

blends into the shadow while on the light side there is a crispness and unblended look, and note how the small folds often end in a little hook.

Practice putting darks in with one brush and blending them off with another. Get so you know how much water you want on your brush to get certain effects. Always mix enough of the color which you intend to use as the large wash, and dip your brush into that instead of into the water and back into your paint, this to avoid giving your wash a streaked look. The Eberhard Faber red or green eraser is a great help to pick out lights. Often a wash when nearly finished has a very discouraging appearance and sometimes all it really needs is the intensifying of the blacks and some touching up of the edges, buttons and the like, with Chinese white.

To practice large washes commence by drawing a large square and tipping your drawing board towards you; draw your brush very full of color across the top of the paper from left to right; refill the brush, taking up the rivulet on the edge of the first line and repeat the operation until you have covered the square. You should

have enough paint mixed in your saucer to finish that square.

There is always transparency and life to the first wash which is lost if you go over it often. Never be afraid if the wash looks too dark. Remember it will dry lighter and resist the temptation to work on it when partly dried. You must keep it clean and bold. Occasionally stand off from your work and see how it looks.

Such things as white dots or stripes on the dark ground of a suit are put in after the dark material is finished, with Chinese white. Gray effects are obtained by mixing Chinese white with lamp black. This makes a body color and can be put over dark in the same manner as pure white.

If a light streak is desired, for instance up one side of the skirt, run a clean brush with very little water in it, up that side while the wash is still quite wet, and this will give the desired effect.

Sometimes a color is added to a wash drawing effectively. This is put on like an ordinary wash but for reproduction necessitates the using of two plates and two printings. See illustrations Numbers 53 and 54.



Fig. 53. © Criterion Magazine.

INDUSTRIAL-ARTS MAGAZINE

Board of Editors

WILSON H. HENDERSON Milwaukee, Wis.
E. J. LAKE Champaign, Ill.
S. J. VAUGHN DeKalb, Ill.

EDITORIAL

A TIRED FEELING.

THIS is the time of year when the long, strenuous stretch begins to tell on the shattered nerves of the teachers of the "special subjects." Why "shattered nerves"? Let us see. There are manual training teachers who meet every week twenty different classes totaling from 300 to 400 different boys. Still worse, there are those who must meet this many boys one week and a similar number of different boys the following week.

Each boy, of course, has his problems, his difficulties, his whims, and his frolics. The teacher, of course must be on intimate terms with each boy, must help solve his problems, smooth out his difficulties, tolerate and humor his whims, engage tirelessly and wholeheartedly in his frolics and swear that he has had a jolly good time of it all and he usually has had—let it be said to the credit of the special teacher.

But this is not all. There are saws to file, tools to grind, belts to lace, machines to oil and repair, lumber and screws and nails and sandpaper and glue to buy, records to keep, and reports to make. There is another incidental item we were about to forget in our enthusiasm, namely, the classes must be taught.

And, yet, there are educational "experts" who are proclaiming that manual training teachers have failed because under such stress they have not produced expert mechanics at the age of fourteen!

Like Tipperary, the day of the coming of the fool-killer seems a long way off, but verily, what a killing there will be when he comes!

OBJECTIONS TO SCHOOL BOY COMPETITION.

AN Eastern Trade Union Publication states that certain local branches of the Printers' Union are much concerned regarding the output of work at the pre-vocational schools. The objections are made to the practice of turning out small jobs of printing in the school shops which might otherwise go to the job printing shops. The printers feel that this is an injustice to them.

Where the schools do commercial work it might appear that the school boys are thus entering into direct competition with men who are engaged in the printing industry. But we cannot understand on what grounds the printers' Unions base their objections. Nearly every one of the schools employs a printer who would otherwise be working at the trade, and would thus be in direct competition with other printers. In a commercial shop this printer would receive approximately \$100 a month,

and in the course of a month would turn out for his employer an amount of printing, the selling price of which would be between \$300 and \$400. Until the school turns out in its shop, printing to the value of \$400 a month, it has not entered into competition with the printers but has removed competition from them.

KEEPING AND USING.

"GET all you can and keep all you get" was the simple, old-fashioned recipe for getting rich. Modern business methods have changed this to "Get all you can and use all you get." *Uninvested capital is not efficient.* This is as true of mental earnings as of financial earnings.

The "learned by rote" facts of school that are not applied may have some educational value, but they are not most accumulative. It is evident that educators must take this lesson from modern business, and dispose of subject matter in the school curriculum that is there just because it has been there, and not because it has direct application in the life of the individual.

A LESSON IN HISTORY.

IN the John Worthy School, Chicago, of which Mr. O. J. Milliken is the efficient principal, they have some interesting ways of doing things. Let it be understood that the boys get into this school only thru the courts.

Just before Lincoln's Birthday, a group of new boys under the direction of a superior woman teacher, was beginning some industrial work, basket-making, of which Mr. Milliken says they never tire. The teacher mentioned the approach of Lincoln's Birthday and soon all were intensely interested in stories of Lincoln; and in fact nearly every boy contributed a story. Immediately, several boys were asking if there were some books they might read about Lincoln. The books were brought in from the library, the baskets were dropped and forgotten, and the stories of Lincoln were eagerly read.

Mr. Milliken was looking on and decided to make an experiment, dangerous as he knew it to be. He stepped forward and said, "How nice! Studying your History lesson?" Every book hit the floor with a dull, sickening thud, confusion set in and the baskets had to be resorted to in order to check the revolt.

We suppose certain modern philosophers would say that such was not a history lesson, since its "controlling purpose" was not to learn history. However, there is something in the method which will appeal to the thoughtful, and the experiment showed a condition which should give school people deep concern.

ENRICH OR IMPOVERISH.

IN their efforts to break away from traditional school methods and to do practical things in a business-like manner, some authorities are patterning their schools after a lower type of commercial shop. The school is conducted on a factory basis, the building is of the factory type, the instructors are journeymen mechanics, the students (?) manufacture a commercial product and work eight hours a day. Perhaps four hours a week are devoted to so-called academic subjects—mathematics, English, etc. There is no gymnasium, no assem-

bly room, no shower baths, no music, no athletics, no play of any character. It is a strictly business proposition and resembles in all essential respects, a commercial establishment except that the pupils are not paid for their work. The training is entirely bread and butter training.

When the pupils have completed a prescribed amount of work, diplomas are given to them. There are no graduating exercises or anything of that character. There is no such thing as school spirit and the graduates take with them no feeling of devotion to, or love for the institution. A visit to such a school is depressing.

The person in charge probably wears a college fraternity pin and has a warm feeling for his college or school. The principal looks back to his school days with a degree of emotion and attends the class reunions regularly. At the same time he entirely neglects that phase of his own school.

At the risk of being judged sentimental and impractical we suggest that an institution which does not in any way touch the emotional life of its pupils is not a fit school for immature boys or girls. We realize that this is not in accord with much of the modern opinion concerning vocational education, but it may be that the movement for vocational education will fail because it does not recognize this fact. Sentiment and emotion are as real and perhaps more powerful than anything else in life. One touch of the emotions can stop any or every shop, factory and mill in the country. What is it that is sending into the Valley of Death two million men singing Deutschland, Über Alles, as many Frenchmen singing The Marseillaise, and the flower of English manhood? What made America rush into war with Spain? What makes the businessman labor into the midnight hour in order to provide more adequately for his family? What holds the family together? That unreal stuff which we call sentiment and which is so closely related to the emotions.

The highest grade corporations have begun to realize the need of ministering to the emotional needs of their employees. The Marshall Field Company has one of the finest choral societies in Chicago, and every year this society gives a concert in the Chicago Auditorium. The Western Electric Company has a band, several athletic teams, a club house, and publishes a monthly magazine for the employees. The Sears, Roebuck Company has an athletic field that surpasses that of almost any educational institution in the country. The United States Steel Corporation publishes monthly magazines in each of its "works" for the employees.

Vocational Education advocates have been asking for a *part* of the school time to be devoted to the acquisition of marketable skill in a vocation. The extremists have gone from the extreme of no vocational training in the school to the other of nothing but shop work in the school. We are not sure but the latter extreme is as bad as the former.

A careful study of the trend of modern industrialism will convince the thoughtful student that one of the greatest needs of the day is education for the proper

occupation of leisure. People do not get into trouble when they are busy, but when they are idle. Thru the introduction of machinery, industrial processes are becoming increasingly automatic, and the mind of the operator is left unoccupied by the work at hand. An idle brain is in truth "the devil's workshop" and while we are giving young people marketable skill in some line of work, we should be sure that we are not at the same time assisting Satan in the establishment of factories. Now we do not mean that the school should devote its entire time and energy to leisure occupations, but every individual should receive *some* such training.

Furthermore every individual must have some fun and relaxation, and if young people are constantly repressed in school, they will find something outside of school, and they do not always choose wisely. Physical and mental relaxation are essential to the retention of mental equilibrium, and when this is a little more universally recognized, such schools as we have described will meet a timely end.

BE PROFESSIONAL.

DURING a discussion in one of the departmental meetings of the convention of the Department of Superintendence in Cincinnati, one of the speakers made a strong appeal to those present to be professional in their work. Stating that in certain specified sections of the United States certain terms such as "prevocational" are being used by schoolmen in order to secure money from the public, he likened such methods to those of the quack medical man who preys upon the ignorance of his patients.

While we do not agree with the speaker that this practice is confined to any particular section of the country, we do wish to join with him in his appeal to be professional. There is no doubt but that many of the persons who are advocating appropriations for vocational education, and strongly appealing for democracy in education, are not prompted by altruistic motives. Some of them are afraid they will lose their positions or authority, or they see in the movement an opportunity for an increase in salary. To make an appeal for more funds for educational purposes, in the name of the children of the country, but actually in order to have the salary of the speaker increased is about as mean as anything we know of. It may be perfectly proper to want an increase in salary, but teachers and superintendents should not hide behind the skirts of children when they ask for it.

The intricate administrative machinery for conducting the schools in a large city seems to be conducive to unprofessional practices and attitudes. The teacher is supervised, examined, principaled and bossed, until he seems to become merely a part of the machinery. He has nothing to say about what he shall teach, when or how he shall teach it. He repeatedly sees the good of the children sacrificed for the advancement of those in authority. But if the teacher loses his professional ethics and begins to look out for his own interests, right then is when he should give up school work, as his term of usefulness is ended.

DR. COOLEY AND THE GERMAN SCHOOLS

F. W. Roman

IN the April number of the *INDUSTRIAL-ARTS MAGAZINE* Dr. Edwin G. Cooley attempts to reply to some of the arguments which were presented on February 5th before the Vocational Education Association of the Middle West.

It was a great regret to a large audience of five hundred and also to the writer that Dr. Cooley failed to take his part in that evening's program. The audience wanted to both hear and see the material on which Dr. Cooley and the writer of this article based their conclusions.

Before coming to the Chicago meeting I had been informed of a certain letter which Dr. Cooley claimed would give Kerschensteiner's support to the dual-control plan. In the expectation that such a letter would be read, I brought the school law of 1913 of Bavaria, and the school regulations for Munich. In addition to this, I had a chart, which the Mayor of Munich revised for me, showing the exact classification of school authority. This corrected chart was mailed to me April 3, 1914. The school law and the chart both show that there is no duplication of superintendents, or duplication of machinery in administration of the schools in Munich. There is nothing there to warrant the dual-local, or dual-state control as our opponents advocate for the United States.

The part of Dr. Kerschensteiner's letter, which Dr. Cooley has quoted is not at all intelligent in the light of the Bavarian school law, and the chart sent to me by the Mayor.

It is not true that each type of school has its own "administrative" board, or that there are five "administrative" school boards entirely separate from one another. The Munich school law shows that there are "Schulbehörde," but not "Verwaltungs-behörde" (administrative boards). The question arises, did Kerschensteiner use the word "Verwaltungs-behörde" in his letter to Dr. Cooley?

The law says that all continuation and trade schools in Munich shall be controlled by a board known as the "Schulvorstandschafft." This board is composed of the following members, the mayor, the city attorney, the city school superintendent, the city school inspector for industrial schools, two members of the city council, three members selected to represent the communes or city districts, two directors of industrial schools, one director of a commercial continuation school, a chairman of a trade school, and a chairman of a district continuation school, one Catholic and one Protestant district school inspector, both of whom must belong to the clerical class, one member chosen from the Chamber of Commerce, and two members chosen by the Chamber of Trades.

In this connection it may be interesting to add that the first three members of this board, that is, the mayor, the city attorney, and the city school superintendent, belong to similar advisory boards that have charge, respectively, of the elementary schools, higher commercial schools, and higher girls' schools.

A glance at the composition of the above board shows how widely it differs from the composition which is proposed by the advocates of the dual system in this country. The so-called "practical board" composed of employers and labor leaders, that is so much heralded by the dual advocates in this country, is not borne out by the Munich experience. The duties of this board are as follows: It presents to the city "Magistrat" who is the second member of the board we have just mentioned, an estimate of the expenses for the following school year, it disposes under certain restrictions of the sums allowed for school expenses insofar as the appropriations have not been specifically designated, it recommends new teachers, and distributes the work among the faculty, it recommends changes in the school organization, and watches over the

health of the pupils and the cleanliness and the general order of the schools.

We see that the above board is advisory and not administrative. The administrative side, both pedagogical and financial, is in the hands of the city magistrate, who is assisted by the city school superintendent. These same men have charge of all other schools in the city. Now where does the dual-control come in? It does not exist.

All changes in the organization of a trade school, especially those affecting the curriculum, change of teachers, school inspectors, must have the sanction of the central state authority. "Kammer des Innern." As stated in my article of the March number of this magazine each independent continuation school has a local board, consisting of a director of a higher trade school, a member of the municipality, and three employers of the trade. The chief business of this board is to keep watch on the regularity of attendance, to smooth out any difficulties that may arise between the employers of labor and the school. This board can neither nominate nor appoint the teaching staff. It has nothing to do with the curriculum, or with the making of the budget. It is not consulted with reference to new buildings or equipment. It cannot even appoint the janitor. And yet these are the "local school boards" that are supposed to warrant the dual-local control in the United States!

In this connection it will be interesting to quote a statement by Professor Charles H. Judd, of the University of Chicago, who spoke before the City Club of Chicago on February 27th. The Sunday Chicago Tribune of February 28th reports Professor Judd as saying that Kerschensteiner told him "the American people would be fools to adopt the dual school system." To say the least, it is very remarkable that Dr. Kerschensteiner should be recommending a system to the United States which he, himself, has not adopted in his own city when as all Germany knows he has been allowed to do as he pleases.

Dr. Cooley says that I do not as much as mention the religious controversy in my own book, the title and place of publication which he has already mentioned in the April number. He has not read my book. On page 88, in discussing the religious question my book states, "Es ist das ein in Preussen gerade jetzt viel unstrittener Punkt. Könnten alle Parteien sich dahin einigen, der Religion einen Platz im Lehrplan anzuweisen, so würde das Fortbildungsschulwesen in Preussen viel schneller weiterkommen." "It is at present a much-disputed point in Prussia. Could all parties agree on the place of religion in the curriculum, the continuation school system in Prussia would be able to make faster advancement." On page 92, I again call attention to the "Kriegszustandes zwischen der kirche einerseits, und anderseits den Direktoren." "War between the church on the one hand and the director of the school on the other." Again on page 192, in speaking of the conditions in the United States I state "Da Schwierigkeiten in dieser Richtung gänzlich fortfallen, so hat man es um so leichter, eine einheitliche Schulpolitik zu verfolgen; denn nichts trennt bekanntlich gründlicher als religiöse Streitigkeiten." "Since difficulties in this direction do not appear in the United States it is so much easier to pursue a uniform school policy; since it is well known that nothing separates people more widely than religious quarrels."

When I gave the address in Chicago I had with me a large number of extracts from speeches made by members of the Prussian parliament which showed that the religious question is the paramount issue that must be settled before very much advanced school legislation can be enacted.

Dr. Cooley once more cites a list of commissions including my own statements that the department or minis-

try which has charge of the vocational schools differs from the one that has charge of the general schools. He says that "this fact cannot be befogged by any long discussion over the relative weight of the local and state boards of Germany." No one has ever disputed this fact so far as Prussia, and to a certain extent, Baden and Saxony, are concerned. There is no use in Dr. Cooley's trying to appear intelligent by telling us things that everybody seems to know. We admit that there is dual-state control in Prussia, but we deny most emphatically that he has the right to substitute dual-local control for the dual-state control which he finds in Prussia.

Dr. Cooley cites the large number of pupils attending the vocational schools in Prussia under the compulsory schemes. It is true that the laws of the empire which I, myself, have cited over and over again in my book and in all my writings allows the communes to make the attendance compulsory but that is an entirely different thing from allowing the communes to have the control of the schools after they have been once established. Let me repeat again with all emphasis that three-fourths of all the commercial and industrial continuation schools of

Prussia have no local boards whatever, not even advisory boards. A part of the remaining one-fourth do have local boards but these boards defray the entire expense of the schools. Even these schools are obliged to be equal to or better than the state schools. The remaining fraction of the one-fourth do have local boards that act in an advisory way, as has been shown in my previous article. My previous careful analysis shows that dual-local control has not even the shadow of ground to stand upon. Dr. Cooley has not answered the charge that he is substituting dual-local control for the dual-state control which we find in Northern Germany; neither has he answered the charge that he is grossly exaggerating the advisory powers of the local boards of Southern Germany.

He says that he does not see what bearing my showing, that authority in Germany is highly centralized, has on this controversy. The audience at Chicago seemed to see the bearing very clearly. For Dr. Cooley's benefit I will restate it in a word. It shows that dual-local control implies a democracy in Germany which we see must be entirely foreign to the whole spirit of the German government.

UNDER-EQUIPPED, NOT "OVER-EQUIPPED"

To the Editors:

I WISH Mr. William Hawley Smith, in his article "Over-Equipped and Under-taught" (INDUSTRIAL-ARTS MAGAZINE, April, 1915) had named the particular schools which Mr. Charles Rohlf of Buffalo inspected; and had confined his discussion to the equipment of those particular schools: because, altho there may be three or four schools in this country which are "Over-Equipped" in their industrial departments, it is a fact that thousands of schools are decidedly Under-Equipped—yes, Under-Equipped. I say so advisedly because during the last six years I have not only personally visited many schools in sixteen states; but, thru carefully compiled records, I know the equipment of all schools of any consequence thruout the entire United States.

I shall concern myself only with that part of Mr. Smith's article which refers to the equipment of industrial schools and shall endeavor to show why I cannot agree with Mr. Smith.

As an example of "Over-Equipped" condition, Mr. Smith dwells at some length on the fact that kitchens of domestic science departments, in general, are equipped with gas stoves entirely whereas it would be highly advisable to have coal or wood stoves, etc. If schools should have coal or wood stoves which they now have not, then how are they "Over-Equipped?"

Then again, I fail to see how Mr. Smith would do away with the individual gas stoves for domestic science. The ordinary classes vary from twelve to twenty girls taking instruction at one time. Shall we have twenty wood or coal stoves running all at one time in the same room? Even if the girls could endure the great heat created in such a room, even if the janitor or someone else would condescend to fetch coal or wood periodically, would not such a system rob the girls of a great deal of valuable time? Furthermore, isn't it a fact that the installation of the ordinary "individual gas stoves" even with the "individual gas plant" is less expensive than the installation of an equal number of coal or wood stoves?

Take it any way you will, it seems to me that with the prevailing system of "individual gas stoves" the funds of the people are most economically expended. Many schools do have at least one coal and wood range and some even have electric hot plates; those that lack these necessities are certainly Under-Equipped and not "Over-Equipped."

Then Mr. Smith deplores the "Super-abundance of lathes in the mechanical departments of these schools" and makes fun of the "pride" of the President of a Nor-

mal School, who has said: "We have more lathes in proportion to our enrollment than any other school in this country." That President surely knew his business and, incidentally, perhaps that is why he was made President of that Normal School.

I believe Mr. Smith will agree with me that everyone who is going to teach manual training, should be able to use a lathe accurately and with some skill. It, therefore, becomes just as much the duty of his Normal School to teach him the use of a lathe as to teach him the use of any other machine. Now, as it happens, it is far more difficult to do turning on a lathe than to operate any other machine used in manual training; obviously, therefore, each student must have the exclusive use of one lathe for quite a while so as to learn how to use it. This brings us to a simple example in efficiency. "If there are sixty boys to take turning, shall we have three classes of twenty each or six classes of ten each?" If we have only ten lathes and are, therefore, forced to have six classes, it is more than likely that we must employ an additional instructor whose salary would be far in excess of interest on the investment and the depreciation on ten additional lathes. It is this simple rule of efficiency that has caused many cities to install a comparatively large number of lathes so as to economize on their instructor's time. Indeed, many schools that have but one manual training instructor who perhaps must also teach some other subject, must have at least one-third as many lathes as they have single benches, or they cannot give "turning" at all.

"Then again," says Mr. Smith, "because most manual training schools were first set up in cities, much of their equipment is 'citified' . . . and is very far removed from the needs of country schools or small-town schools, whose purpose is the industrial education of their pupils." Given any trade or occupation to teach—say agriculture, cabinetmaking, printing, or machinist's trade—and I cannot see how the equipment for teaching that particular trade can be either "citified" or countrified. If you are not going to fake at it—if you are going to teach that particular trade at all, there should be but one way to teach it—the right way: How then, can the correct equipment vary? True, the community may not be able to afford a correct equipment; but that is another question and in that case I would say they better not attempt it at all until more funds are available.

Take this matter from another viewpoint: Suppose, in a given community, it was decided to teach blacksmithing; would Mr. Smith have us go to the local blacksmith

and copy his equipment? Such a course would be equal to adopting the "figgerin" system of the corner grocer as a course in bookkeeping.

Give the pupils an ideal, practical equipment in any work so that they may be able to uplift, if possible, the local industrial conditions.

Yes, industrial departments are generally under-equipped. I have seen woodworking departments without even a tool grinder, I have seen a circular sawing machine improvised from a grandmother's sewing machine, I have seen homemade band saws consisting of wood frame and two bicycle wheels, I have seen one motor driving three machines by slipping off one belt and putting on another every time it is desired to use one of the other two machines . . . Why, I can go on enumerating any number shamefully deficient equipments now in use.

Right here I wish to state that I have come in contact with hundreds of ingenious, capable manual training teachers who are held back because of lack of equipment, as against one of the kind who has a good equipment and is not making the most of it.

If we are going to have industrial education, let us not be halfhearted about it. It costs of course, but what of it? Railroads cost, would you give them up; fire departments cost, would you give them up; police departments cost, would you give them up; automobiles and

power trucks cost, would you give them up? The Panama Canal cost a great deal; was it worth while?

Then Mr. Smith says: "Much more of the people's money is spent in equipping such schools than is wise or right. As a matter of fact, more than one such school has been so crippled, at the very outset, by an extravagant equipment." I wonder what basis of comparison Mr. Smith has for that statement. If we compare present day school equipment with that of "The Little Old Red School House on the Hill," we may perhaps come to some such conclusion; but open your eyes—look about you—visit any modern shop of any of the industries you may choose to consider and you will see how puny, how inadequate any school equipment, for teaching that industry, will look along side that of the modern shop.

In conclusion, it seems to me that the only thing to consider is the product of the school shop—the pupil. If industrial education is worth while then it is surely worth while teaching it well; and no matter how good an instructor you have, if you have not the proper equipment you cannot get good results.

If your shop is under-equipped the same as thousands I know, get busy, ask your Board for what you ought to have—that's your duty to the coming generation.

St. Louis, Mo., March 28, 1915.

F. W. Kirkjian.

HOW IT WAS DONE!

The purpose of this Department is to present monthly a wide variety of shop projects which have been actually worked out in elementary, high, trade and continuation schools. Contributions are solicited and will be paid for—THE EDITORS.

BASKETBALL GOAL BOARDS.

Arthur Kinkade, Decatur, Illinois.

As Spring draws near, the season of outdoor play will begin to receive attention from school people the country over. In most communities, perhaps, provision has been made to make these playground activities of as much value as possible to the children who are to indulge in them. In a large number of places, however, there are no doubt those who would enlarge this opportunity for organized play if suitable apparatus was to be had at a price not too prohibitive.

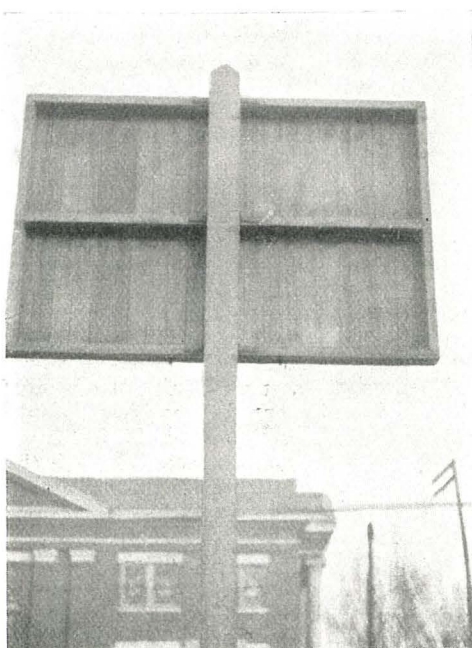
It is the hope, therefore, that the project herewith

presented will meet a need along the line suggested and be of real benefit to a large number of youngsters who enjoy good games on the school playground.

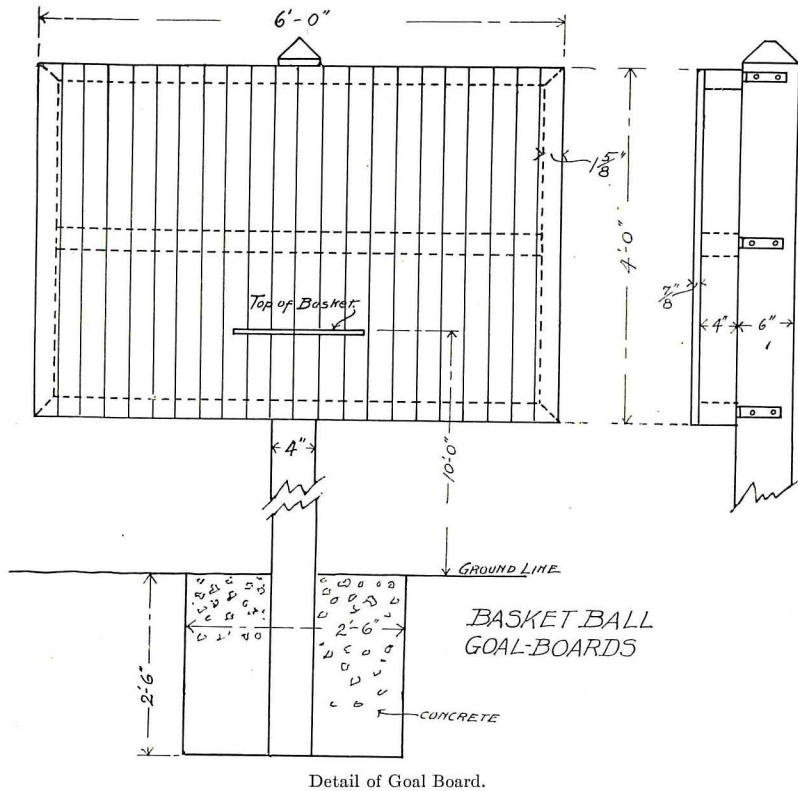
Basketball deserves the place it has earned in the scheme of organized play; and the outlay necessary to maintain the game, after the first cost of apparatus installation, is not a serious problem. It is with this primary installation that this article has to do. About twelve of the playgrounds in Decatur have been supplied with the goal boards described herein, and the making of these boards has been accomplished by boys in the seventh and eighth grades under the direction of the writer.

The accompanying detailed drawing shows clearly the simple method of construction, and the size permits of their being made in almost any manual training shop. Every manual training teacher has many times faced the problem of so arranging his plans that the work would advance all along the line at something like the same speed. Boys are boys, however, and strangely enough they do not complete a given task in a given time and of a given quality as we older folks always do! No, there always are some who finish ahead of the class, and others who like the proverbial cow's-tail, are always behind. Now here is an opportunity to meet an existing situation by allowing the leaders of a class to work on the special project. And indeed I have found quite a few boys who as a rule dislike bench woodwork, but who were anxious to work on these goal boards. Other types of boys delighted in the privilege of painting this work, and still others were glad to be allowed to dig the holes and mix concrete. It will be found that the regular work in the shop will be disturbed but little by the introduction of this character of work. On the other hand, a new interest will manifest itself thruout because of this introduction, and the spirit coming out of it is in every way desirable.

Because of the fact that basketball goal boards are constantly exposed to the elements, one should use materials that are known to possess qualities that render them as nearly waterproof as possible. We used cypress



Back of a Goal Board.



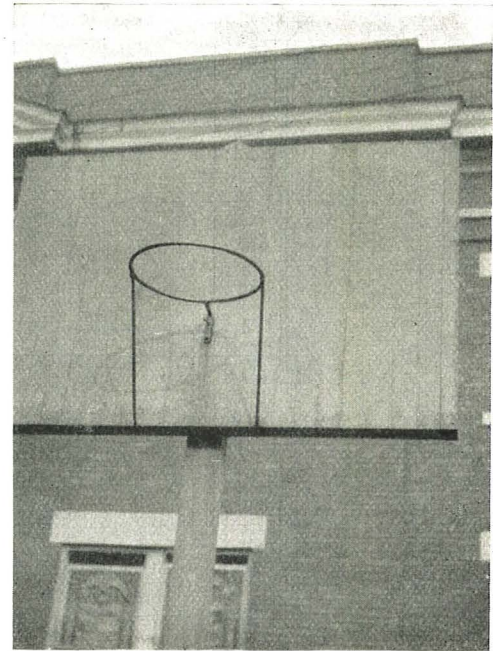
Detail of Goal Board.

for the posts and framework, and first-quality edge-grain fir flooring for the facing material. Cut casing nails will outlast the common wire nail many times over and in this case they were used thruout. The framework is mitered at the corners and the horizontal nail-tie is spiked in the center. The flooring is run the short way (vertical) and planed flush on the end with the framework. The top of the posts should be sawn on an angle of 45 degrees to exclude rain water, and the lower end may be tapered to admit of lifting out of the cement base where it is desirable to make the goal boards portable. Some situations might require the portable feature, but in most instances it may be neglected. A gallon of good oil paint will be sufficient to give both goal boards and posts two coats of paint,—and this should be done.

The concrete base is necessary to insure the rigidity of the posts, as the windstrain is oftentimes quite severe. The base shown here has withstood four years' service to the writer's knowledge, and is ample. One bag of cement will be sufficient for each post. Cinders and brickbats make a very desirable aggregate for this purpose, and sometimes this procedure will have a double value, by cheapening the cost and getting rid of the bricks and cinders. It will be found to be advantageous if the goal boards are securely fastened in place on the posts before erection, using six good angle iron braces for the purpose. These should be put on with screws in the places indicated in the drawing. After the holes are made ready, the assembled work is raised in place and braced four ways. Care should be exercised that the posts be perfectly plumb before the concrete is shoveled around them, and the braces should not be removed for at least a week in order that the base be not shattered before it sets thoroly.

The hoops or baskets are made of $\frac{3}{8}$ " round iron and are 18" in diameter. The ring should be ten feet above the ground and six inches away from the banking surface. The standard surface is presented in the plan, and provides three feet above, and on either side of the basket. Local conditions sometimes govern the size of basketball courts, but a good plan to follow is to make the court 35 feet wide and 60 feet long.

The carrying out of this project will entail some extra work on the manual training teacher who directs



Front of a Goal Board.

Lumber Bill for One Set (Two Goals).

- 2 pcs. 4 in. x 6 in. x 16 ft. S4S cypress.
- 6 pcs. 2 in. x 4 in. x 6 ft. S4S cypress.
- 4 pcs. 2 in. x 4 in. x 4 ft. S4S cypress.
- 22 pcs. $\frac{7}{8}$ in. x $3\frac{1}{4}$ in. x 8 ft. fir flooring.

the work, but the results are altogether satisfactory all around. It has been successfully carried out and is entirely practical. The materials may be procured thru the board of education, or by community organizations in the neighborhood of the schools receiving the benefit. The co-operation in either case will be found to be splendid, and it will be further found that it will be necessary to eliminate rather than to urge the boys to enter into the scheme.

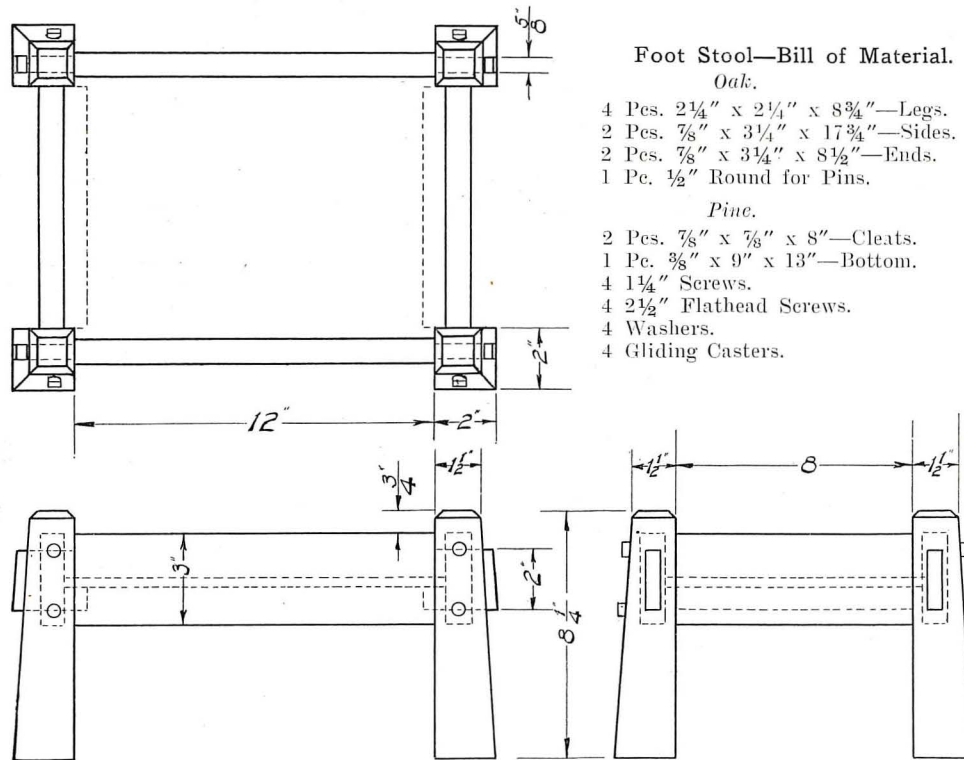
A FOOT STOOL.

Harry W. Anderson, Cedar Falls, Ia.

THE material for this foot stool should be quartered white oak. The legs and side stretchers are cut first. Cut the legs to the right length and square the ends. Lay out and saw the taper on the legs according to the drawing. Then lay out and cut the mortises in the legs and fit the tenons of the side pieces carefully. The projecting tenons can be either chamfered or rounded off. The top of the legs in the footstool shown are rounded off $\frac{1}{4}$ " but



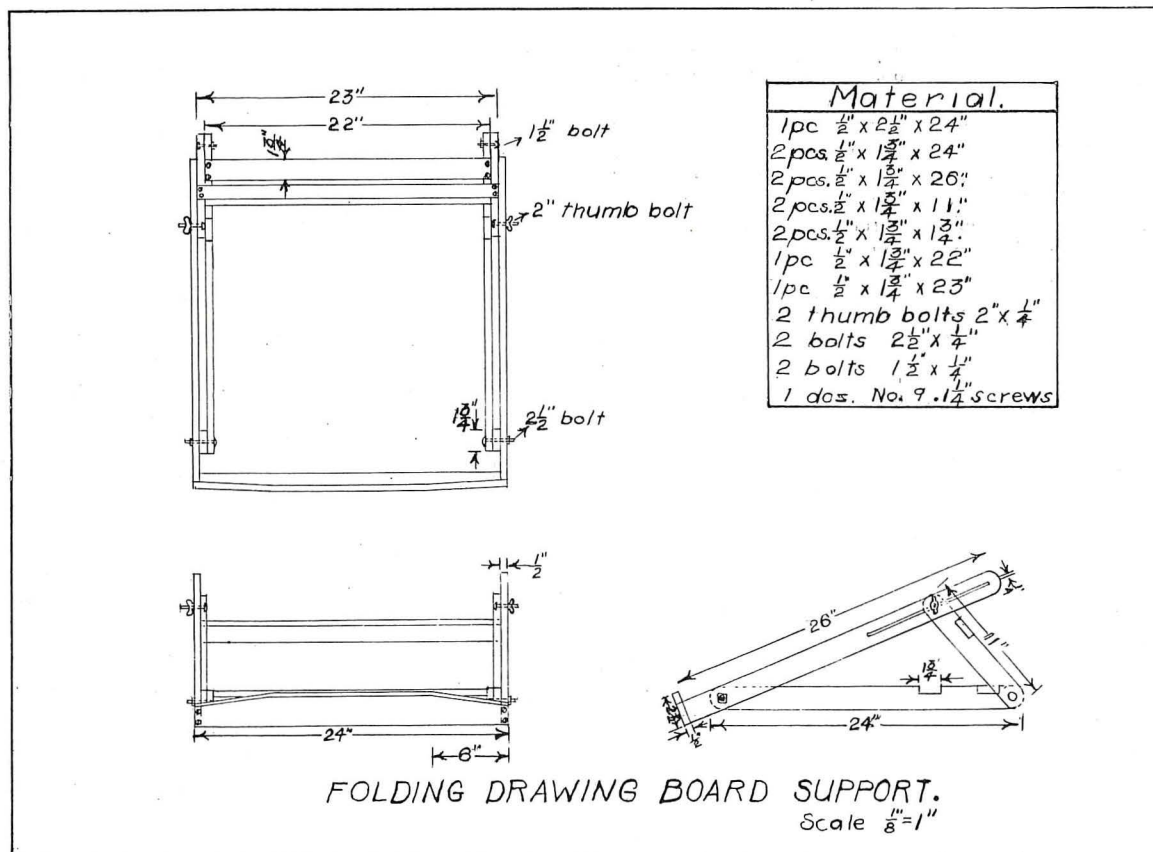
Foot Stool. Designed by Mr. Anderson.

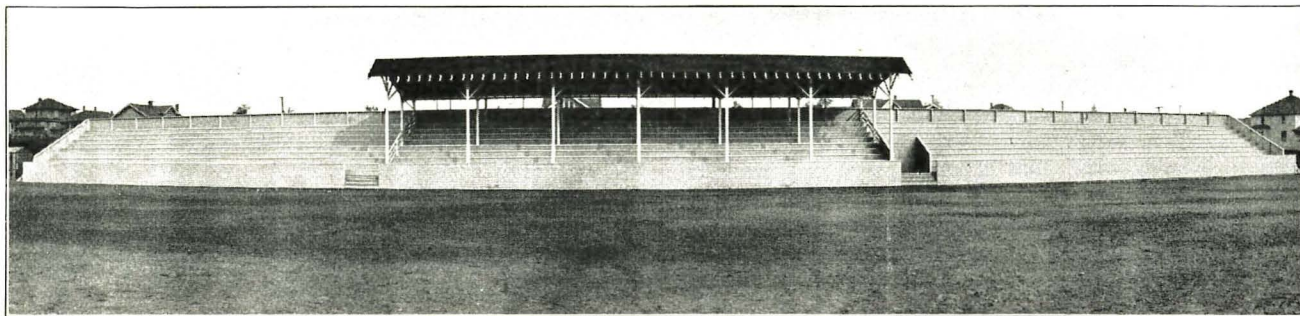


Detail Drawing of Foot Stool.

can also be chamfered. All the pieces should be carefully planed, scraped and sandpapered before assembling. If acid stain is to be used it would be well to moisten the pieces slightly with a damp cloth, after sanding, to raise the grain and then sand again with fine sandpaper. Glue and clamp the legs and the side pieces in place, squaring them up carefully. The end pieces can be either tenoned

and glued into the legs or fastened as in the original in which the ends were fastened with $2\frac{1}{2}$ " screws, the holes for the screws counterbored to a depth of $\frac{5}{8}$ " and little pins inserted. The cleats which support the bottom board are fastened with $1\frac{1}{4}$ " screws. The bottom board is cut and fitted in place. It gives a beautiful fumed oak finish. The stain is first applied freely and, as it raises the grain





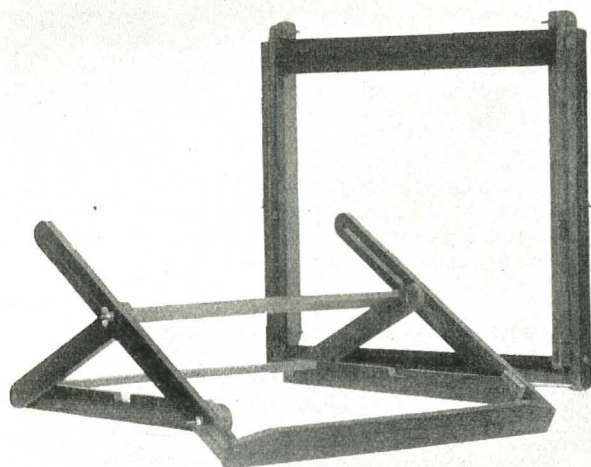
Grand Stand Made by Students of Everett, Wash., High School.

slightly, it must be sandpapered with worn sandpaper after it has dried at least 24 hours. "Half and Half" is then applied, a mixture of equal quantities of linseed oil and turpentine. When this has stood for 24 hours apply a coat of shellac which has been thinned with wood alcohol. It is then rubbed with worn sandpaper and steel wool and one or two coats of wax applied. The footstool can be upholstered in Spanish leather, or a slip cushion of the same material can be used. With the addition of four gliding casters the footstool is complete and ready for use.

DRAWING BOARD SUPPORT.

A. W. Jessen, Sycamore, Ill.

THIS is a problem worked out by a class in response to a need for some kind of device to hold a drawing board at any desired angle on a flat table. It had to meet the



Drawing Board Supports.

following requirements: It must be light; a dozen or more must occupy but small space; it must be easily and quickly adjusted; and it must be simply and strongly constructed.

Similar supports in considerable variety were worked out. Two are shown in the accompanying photograph.

A HIGH SCHOOL GRANDSTAND.

Frank C. Vincent, Everett, Wash.

ON June 5, 1912, the Board of Education of Everett, Washington decided to erect during the summer vacation a grandstand on its athletic field. It was the desire of the school officials that the High School boys do as much as possible of the work under the direction of the Vocational Department and that they receive some pay for their work. The seating capacity of the stand should accommodate about two thousand boisterous, jumping football rooters.

With this information at hand the author was instructed to prepare preliminary plans and estimates.

These were approved by the Board, and directions given not to exceed \$2,000.00 in its cost.

The structure was to be a large one and the time in which to build it was limited to the three summer months. It must be strong enough to carry unusual loads and strains. Because of these factors the boys did not participate in the preparation of the plans and estimates.

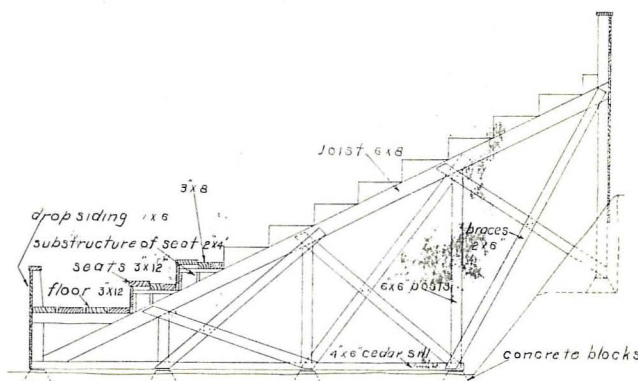
The whole proposition was placed strictly upon a commercial basis. Bids on the lumber bill were advertised for. "Cured" concrete blocks were bought for less than we could make them. The boys were paid twenty cents per hour and worked eight hours per day. In less than a week twelve boys were at work digging holes in the hardpan with pick and shovel for the foundation blocks, and framing up the timbers for the sub-structure. One boy was selected as foreman at the same pay as the others. He was given complete charge of the work when it was occasionally necessary for the author to be absent. Each boy was given to understand that, aside from being a school boy, the only qualification necessary to hold down his job was a willingness to work.

With the exception of the outside help used in making and laying the sheet iron gutter and installing the toilet fixtures, the boys did all the work from laying out the foundation and setting the blocks, and digging the ditch for the sewer pipe, to laying the shingles and staining them. On the average, about six or seven boys were employed thruout the summer.

In two instances—the laying of the shingles and painting—the boys were paid the union scale by the piece, with the understanding that if at any time the quality of their work was not satisfactory it would be done over on their own time. It is needless to say that they earned more than twenty cents per hour. They could not have worked harder if they had been digging trenches under fire on a Belgian frontier.

The structure is 288 feet long; has seating capacity of 2,000; contains 192 concrete foundation blocks, 65,000 feet of lumber, 26,000 shingles. It contains two dressing rooms and toilet.

It received two coats of paint—light gray trimmed in white, and the roof was stained green.



Section thru bleachers.
These frames spaced 8'0" on centers.
Plan of Grand Stand Construction.

The final cost exceeded the original allowance by \$130. This was due to a change in the design of the roof, necessitating more material, and to the porosity of the lumber, somewhat weathered when it was painted, using much more paint than was estimated.

It stands as a monument to the good-will and hard work of the boys who built it; all of whom were under twenty years of age.

VOCATIONAL TRAINING IN MOVING PICTURES.

At the request, and with the assistance, of the United States Bureau of Labor Statistics, a moving picture film illustrating what is being done in Massachusetts in Vocational Education, has been prepared for use at the Panama-Pacific Exposition. The film has been prepared under the direction of Wesley A. O'Leary and with the co-operation of the Publicity Department of the United Shoe Machinery Company and tells the story of one boy's success in simple and popular form.

Jim Blake, when the story opens, is facing the problem of "what shall I do with my education." He is the son of a poor mother who has already made sacrifices to keep him at school and whom he is unwilling to tax further. By contrast, a chum of his, Dick Mason, is shown us, equally anxious to get to work, but who gives no thought to the "string" that may be tied on the first pay-roll.

Jim's mother is a "long thinker," and in her company we see Jim make the preliminary visits to the officials of the school whose system, she had heard, will solve the serious little problem. The first step is to find out all about the school from Principal W. P. Taylor, the "guide, philosopher and friend" of the Beverly boys. From him Jim learns that there is a vacancy, and settles down to work.

In a series of pictures the daily round of the school is shown us, with one week spent in class and the next in the factory. The practical connection between lessons and work is followed step by step, and we see the simple mechanical operations, that Jim is enabled to carry out from his first week, find their place, not in exhibitions of work done, but in real machinery that will be shipped to the ends of the earth. That nothing of the lesson may be lost, we see Dick from time to time, drifting from one unskilled job to another, while the wages that tempted

him at the start soon lose their attractive power and are eventually surpassed by the boy who chose to work and learn at the same time. The film ends with Jim's second year, and his graduation into the factory as a skilled mechanic of high wage power. And, of course, with the reward for the hard working and thoughtful mother that her foresight had earned.

The attractive methods of the "movie" have seldom been put to better use than in the film prepared by Mr. O'Leary with the aid of the United Shoe Machinery Company, and it is safe to predict a wide circulation for its message and missionary enterprise.

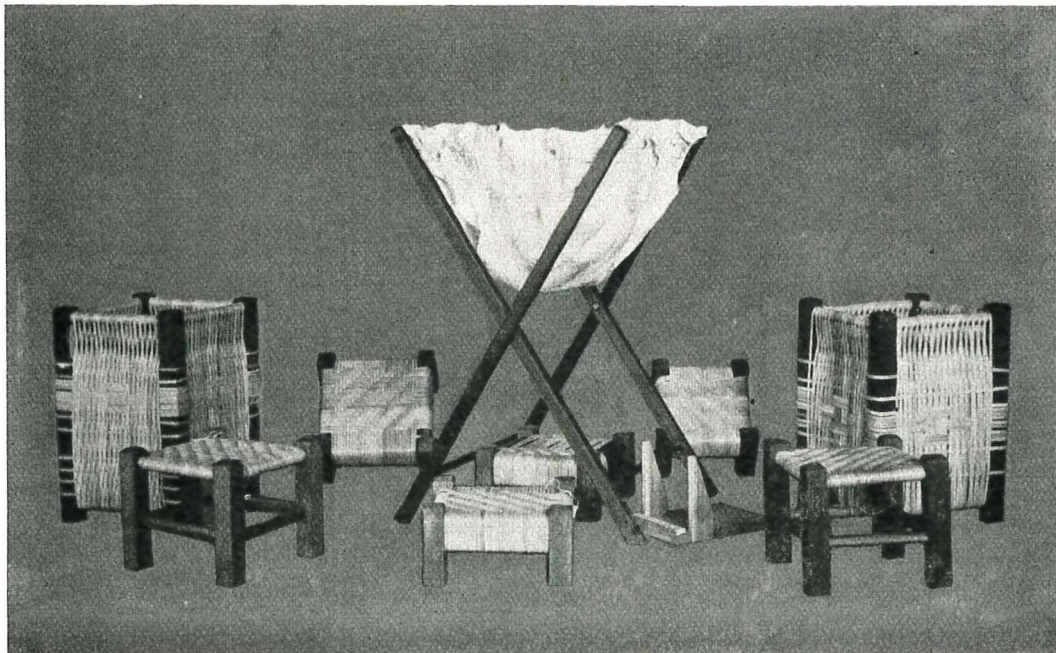
COMPETITIVE TRADE-SCHOOL SCHOLARSHIP.

THRU the generosity of Mr. E. M. Walsh, painter and decorator, New Haven, Conn., member of the advisory board of the boardman apprentice shops, a prize scholarship of the value of \$100 has been established. A competitive examination was held on January 16, 1915, open to candidates for admission to the course in painting and decorating in the Boardman Apprentice Shops, New Haven.

The course, as outlined, is slightly more than two years in length, and includes 4,800 hours of instruction. According to the published announcement, additional prizes are open to students after enrollment in the course, as follows:

- No. 1. Paint and Oil Club scholarship, \$100, New Haven.
- No. 2. National Lead Co. scholarship, \$100, New York City.
- No. 3. Master Painters' scholarship, \$100, New Haven.
- No. 4. The R. P. Rowe scholarship, \$100, New York City.

It is the purpose of these prizes to assist boys in paying their expenses while at school, the \$100 representing approximately one-half of what a boy would be able to earn were he at work in the usual occupations open to him during this period. Upon completing the training, positions are guaranteed by the master painters of the city of New Haven, who agree to pay to the graduate upon the completion of his time from \$2 to \$3 per day with steady employment, and to give him an opportunity to progress in the trade.



Waste Baskets, Sewing Stand, Foot Stools and Bread Slicer made by girls in the Cleveland Summer School, 1914, Newark, N. J.
Mr. Philip M. Wagner, Shop Instructor.

THE EASTERN ART AND MANUAL TRAINING TEACHERS' CONVENTION

Buffalo, April 28-30, May 1

THE EASTERN ART AND MANUAL TRAINING TEACHERS' ASSOCIATION will hold its annual convention for 1915 in Buffalo, April 28, 29, 30 and May 1. By a fortunate coincidence the president of the association, Mr. Harry W. Jacobs, is a resident of the convention city. Accordingly, the preparations for the meeting are especially complete and satisfactory.

The general sessions and the round tables of the association will be held in the Hotel Lafayette. The exhibition will be placed in the Broadway Auditorium, an immense, specially equipped exhibition hall, within ten minutes' walk from the headquarters. In addition to the annual dinner a special excursion to Niagara Falls has been arranged for the members.

Of the program features arranged for the convention, it is expected that the reports of the committees on Professional Qualifications of Manual Training Teachers, on Uniform Standards in Drawing, on the Time Required for Manual Training and on Function and Terminology, will be most important.

The complete program for the meeting is as follows:

Wednesday Evening, April 28th.

President Harry W. Jacobs, Presiding.

Address of Welcome. The Mayor or Superintendent of Schools Emerson.

Art in the Trades. Wm. Sloane Coffin, W. & J. Sloane Co., New York City.

The Commercial Value of Art in Wall Paper Designing. Charles Booz, Head Designer, M. H. Birges Sons Company, Buffalo, N. Y.

Thursday Afternoon, April 29th. 2 P. M. Round Table— Vocational Section.

Millard B. King, State Supervisor Industrial Education, Pennsylvania, Presiding.

Matters which ultimately and vitally concern both the employer and the employee are being dealt with by means of a joint agreement known as the protocol. It is coming to be recognized that in some industries the training of the worker should be as much a matter of trade agreement as hours of labor, scale of wages, grievance boards, etc.

Industrial Education and Trade Agreements. Alfred P. Fletcher, Ass't. Supt. of Schools, Rochester, N. Y.

Discussion: The Prevocational School is a New Element in the Training of the Industrial Worker. What is its Present Place and Future?

The Present Trend in Prevocational Education. E. W. Boshart, Director Industrial Arts Mt. Vernon, N. Y.

Discussion: Alvin E. Dodd, National Society for the Promotion of Industrial Education.

Organization and Operation of Vocational Courses in Printing. Wm. B. Kamprath, Principal Elm Vocational School, Buffalo, N. Y.

The Problem of the Evening School. Lewis H. Wilson, State Dept. of Education, Albany, N. Y.

Thursday Afternoon, April 29th. 2 P. M. Round Table— Manual Training Section.

C. B. Connelley, Carnegie Technical Schools, Presiding.

As an element of liberal education it is part of the function of Manual Training to aid in interpreting the Industrial work. How may Manual Training develop a better appreciation of the significance of specialization in industry?

The Manual Training Course with an Industrial Bent. A. W. Garret, Ass't. Director Manual Training, New York City.

Jigs. Fred P. Reagle, Director Manual Training, Montclair, N. J.

Summation. A. W. Richards, New York City.

Report of Committee on "Professional Qualifications of Manual Training Teachers." Committee: James McKinney, Chairman; F. W. Wing, Buffalo, N. Y.; Edw. C. Emerson, Boston, Mass.; Helen Livingston, Pittsburgh, Pa.; A. E. Enwistle, Philadelphia, Pa.

Thursday Afternoon, April 29th. 2 P. M. Round Table— Drawing Section.

Royal B. Farnum, State Supervisor Drawing, New York, Presiding.

The Manner in which Purpose and Material Limit and Condition Applied Design. Martha Feller K'ag, Director Drawing and Art Work, Orange, N. J.

Discussion: Led by Herbert Kniffen, Director of Art, University of Pittsburgh, Pittsburgh, Pa.

The Minimum Essentials in Drawing for Future Grade Teachers. Mary A. Pearson, North Adams, Mass., Normal School.

Discussion: Miss Rose Fetterolf, State Director of Drawing, Pennsylvania.

Rheims Cathedral (Illustrated). Fletcher Carpenter, Rochester, N. Y.

Report of the Committee appointed to investigate and report upon a plan for the establishment of uniform standards in representative drawing in elementary schools. Committee: J. W. Andrews, Yonkers, N. Y., Chairman; Royal B. Farnum, Albany, N. Y.; Mabel B. Soper, Bridgewater, Mass.; Flora B. Potter; Jean Kimber.

Thursday Afternoon, April 29th. 2 P. M. Round Table— Household Arts Section.

Martha Van Rensselaer, Director of Home Economics, Cornell University, Presiding.

Education in Home Economics. Miss Martha Van Rensselaer.

Dress Design. Miss Jane Fales, Director, Department of Textiles and Clothing, Teachers College, New York City.

Relation of Art to Home Economics. Miss Annette Warner, Department Home Economics.

Some Vocational Aspects of Home Economics. Miss Cleo Murtland, Ass't. Secy. in Charge of Women's Work, National Society for the Promotion of Industrial Education.

Thursday Evening, April 29th.

Banquet—Hotel Statler.

Henry P. Emerson, Supt. of Education, Buffalo, Toastmaster.

College and the Vocations. Dr. Frederick H. Sykes, President of Connecticut College for Women, New London.

Pageant—Joan of Arc. Pupils of Buffalo High School.

Friday Morning, April 30th, 9:30 A. M.

President Harry W. Jacobs, Presiding.

Architecture as a Factor in Education. David Varon, Architect, New York City.

Design vs. Dividends—The Acid Test. A. S. Bennett, Manager School Arts Publishing Company, Boston, Mass.

The Development of Problems in Design. Raymond P. Ensign, Instructor, School of Fine and Applied Arts, Pratt Institute, Brooklyn, N. Y.

The Organization and Operation of a Technical High School. A. S. Hurrell, Principal Technical High School, Buffalo, N. Y.

Friday Afternoon, April 30th. Exhibition.

Visits to Larkin Factories, Lackawanna Steel Works, Carborundum Works, Royerofters, East Aurora, Albr'ght Art Gallery, Technical High School.

3 P. M. General Round Table on Manual Arts.

Arthur W. Richards, Ethical Culture School, New York, Presiding.

Report of Committee appointed in 1914 to study question of time required for the Manual Arts.

Committee: Wm. R. Ward, Trenton, N. J., Chairman; A. W. Garrett, New York; W. R. Gale, Baltimore, Md.; Charlotte Herckner, Hackensack, N. J.; Florence O. Bean, Boston, Mass.

It is generally agreed that Vocational Education will be most effective when built upon strong foundation courses in Manual Training. The time seems ripe for a definite pronouncement on Function and Terminology by this Association.

Report on Function and Terminology in the Manual Arts. Committee: E. E. MacNary, Springfield, Mass., Chair-

man.; J. C. Brodhead, Boston, Mass.; M. B. King, Harrisburg, Pa.; Alfred Fletcher, Rochester, N. Y.; E. B. Kent, Jersey City, N. J.; Augustus Rose, Providence, R. I.

Friday Evening, April 30th. Exhibition Night.

Saturday Morning, May 1st.

Daniel Upton, Principal, State Normal School, Buffalo, N. Y.

Art, an Asset to the State. Dr. John H. Finley, Commissioner of Education, New York State.

The Development of Power Thru Manual Training. James Simpson, Central Trades & Labor Council, Toronto, Canada,

former member Royal Commission on Industrial Education.

How to Make a Poster. Manager, International Art Service, New York.

Saturday Noon, May 1st. Business Meeting.

President Harry W. Jacobs, Presiding.

General Business, Reports of Secretary-Treasurer, Votes on changes in name and constitution, Election of Officers, Selection of meeting place for next year.

Saturday Afternoon, May 1st. 1:00 P. M.

Visit to Niagara Falls.

The Western Drawing and Manual Training Meeting

Chicago, May 5-8

THE WESTERN DRAWING AND MANUAL TRAINING ASSOCIATION will hold its twenty-second annual convention as guest of the Board of Education of the City of Chicago and the Superintendent of Schools; the Art Institute of Chicago, and the Association of Commerce. All of the meetings will be held in the Art Institute and all exhibits will be placed in the galleries of the same building. The committee in charge of the local arrangements is planning to make the visit in Chicago a busy and profitable one.

As many of the members wish to spend some time visiting the public schools, the museum, social settlements, technical, art and normal schools, trade and apprentice schools, of Chicago, Monday, Tuesday, and Wednesday immediately preceding the formal program, have been designated visiting days. Special directories, giving directions for reaching the various places of interest have been prepared for distribution. Special attendants will be at the headquarters in the Auditorium Hotel to furnish lists and other information.

The general topic for discussion of the program is "Co-operation in Educational Problems." Various speakers will discuss the subject from the angles of household arts, drawing, manual training, vocational education, and develop bases of co-operation for school, home, shop, and church. The formal program will open Wednesday afternoon.

PROGRAM.

The formal program will begin Wednesday afternoon, May 5, with a General Session at 1:30 P. M.

All meetings will be held in Fullerton Hall, Chicago Art Institute.

Admission to Art Institute by membership badge or Art Institute ticket (Wednesdays and Saturdays, free days). Admission to Fullerton Hall by membership badge or guest ticket.

General topic: "Co-operation in Educational Problems."

Wednesday, May 5, 1:30-3:30 P. M. General Session.

Invocation, Dr. Jenkin Lloyd Jones.

Addresses of Welcome: His Honor the Mayor of Chicago; Mr. Chas. L. Hutchinson, President of Art Institute of Chicago; Mr. Michael J. Collins, President of Board of Education, Chicago.

Response and Key to Program, by the President: Miss Florence H. Fitch, Director of Art Instruction, Indianapolis Public Schools, Indianapolis, Ind.

Address: Mrs. Ella Flagg Young, Superintendent of Schools, Chicago, Ill.

3:30-5:00 P. M. *Art Round Table,* Miss Lucy S. Silke, Supervisor of Art, Chicago Elementary Schools, Chairman.

"On the Teaching of Lettering." Ernst F. Dettler, Chicago Normal College.

"Some Vital Elements in the New Art Movement." George Senseney, The New School of Drawing, Painting and Etching, Chicago.

"Art Appreciation in the Grades." Miss Myrtle Irons, Rockford, Ill.

6:30 P. M. *Banquet.* Auditorium Hotel, Banquet Hall, 9th Floor. Please be prompt.

Toastmaster, Mr. S. J. Vaughn, State Normal School, De Kalb, Ill.

Informal Talk on Color Photography, Mr. Harry Wells, Evanston, Ill.

Thursday, May 6, 9:10-10:30 A. M. General Session.

Election of Nominating Committee and Appointment of Committees on Resolutions and Place of Meeting.

"The Manual Arts and the New Education." William T. Bawden, Dept. of Education, Washington, D. C.

"Planning a Course in Mechanical Drawing." J. E. Painter, Supervisor of Manual Training, Minneapolis, Minn.

10:30-12:00 A. M. *Manual Training Round Table,* Mr. Fred V. Cann, Lakeside Press, School of Printing, Chicago, Chairman.

"Manual Training and Industry." C. L. Woodfield, Director of Chicago Typothetae School of Printing, Chicago.

"Economics of Vocational Guidance." R. C. Booth, Vocational Director Chicago Association of Commerce, Chicago.

"Manual Training Efficiency." Chas. W. Sylvester, Director of Manual Training, Springfield, Ill.

1:30-5:30 P. M. *Visiting Exhibits and Art Schools.*

Art School of The Art Institute, Academy of Fine Arts, School of Applied and Normal Arts, Armour Institute of Technology.

8:00 P. M. *General Session.*

"What Mental Processes are Cultivated Thru the Technical Arts." Dr. Charles H. Judd, Department of Education, University of Chicago.

9:15-10:30 P. M. *Reception.* Chicago Art Institute.

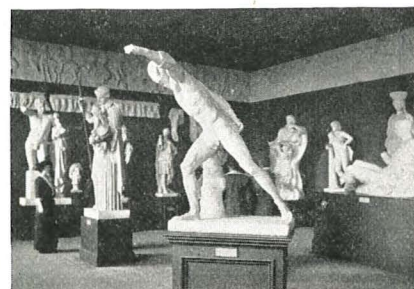
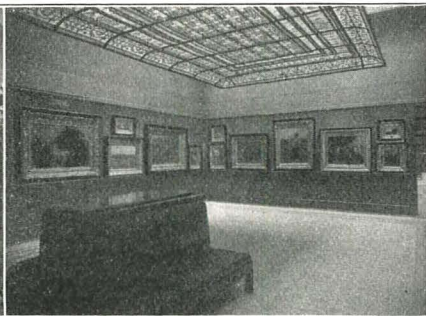


Exhibit Rooms in The Chicago Art Institute where the sessions and exhibitions of the Western Drawing and Manual Training Association will be held.



The Chicago Art Institute, where the sessions and the exhibitions of the Western Drawing and Manual Training Association will be held.

Friday, May 7, 9:00-10:15 A. M. General Session.

"Art Training in Relation to Retail Merchandise." Mrs. Lucinda W. Prince, Director of School of Salesmanship, Boston, Mass.

"Home Planning: The Study of Artistic and Economic Features in the Public Schools." Miss Estelle Peel Izor, Director of Home Decoration, Manual Training High School, Indianapolis, Ind.

10:15-11:30 A. M. *Household Arts Round Table*, Miss Winifred M. Frye, Milwaukee, Chairman.

"The Purpose and Content of Household Arts Courses in the Schools." Miss Jennie H. Snow, Chicago Normal College.

"The Teaching of Color Harmony in Relation to Dress-making." Miss Gertrude M. Copp, Milwaukee Trade School for Girls, Milwaukee, Wis.

"Raw Materials in the Textile Work." Edward F. Worst, Director of Elementary Manual Training, Chicago, Ill.

11:30 P. M.-12:30 A. M. *Business Meeting*.

2:30 P. M. *Automobile Tour*.

8:00 P. M. *General Session*.

"Art in the Home." Fred H. Daniels, Director of Drawing, Newton, Mass.

Saturday, May 8, 9:00-10:30 A. M. General Session.

"The Weakest Link." R. J. Leonard, Department of Vocational Education, Indiana University, Bloomington, Ind.

10:30-12:00 A. M. *Vocational Training Round Table*, R. C. Woolman, Des Moines, Iowa, Chairman.

"The Boy or the Trade as an Aim." Ira S. Griffith, University of Missouri, Columbia, Mo.

"School versus Shop Methods." F. D. Crawshaw, University of Wisconsin, Madison, Wis.

"Industrial Blind Alleys." R. W. Selvidge, George Peabody College for Teachers, Nashville, Tenn.

THE HIXON MANUAL TRAINING SCHOOL.

C. E. Brower, Instructor in Cabinetmaking and Drafting.

A PUBLIC-SPIRITED CITIZEN, Mr. F. P. Hixon, has placed in the hands of the young people of La Crosse, Wis., a splendid opportunity for practical education by erecting and equipping a manual training annex to the La Crosse High School. The school is an integral part of the city school system and is conducted and maintained by the Board of Education.

The two-story brick building in which the school is housed, measures 64 by 210 feet, and is connected to the main high school by three bridges or covered corridors. On the first floor are a machine shop, lumber room, mill

and lathe room, wash room, foundry, forge room, locker room, shower room and swimming pool. On the second floor are a bench room, finishing room, wash room, two classrooms, two drafting rooms, Manual Training office, gymnasium and office for gymnasium director.

The Manual Training courses offered in the Hixon Manual Training School are two years and four years in length. The boys may, if they choose, take a course extending over two years or a course extending over the full four years. The two-year course is as follows:

First semester—Joining and Mechanical Drawing.

Second semester—Cabinetmaking and Mechanical Drawing.

Third semester—Woodturning and Mechanical Drawing.

Fourth semester—Patternmaking and Mechanical Drawing.

The four-year course is as follows:

Fifth semester—Foundry and Mechanical Drawing.

Sixth semester—Forging and Mechanical Drawing.

Seventh semester—Machine Shop Work and Mechanical Drawing.

Eighth semester—Machine Shop Work and Mechanical Drawing.

The Manual Training work correlates with the other high school work. One unit credit is given for a course consisting of two forty-five minute periods per day and five days per week.

Besides the regular four-year course, there are offered two other courses: First, special training for engineering schools; and second, a course which will give a good insight to some vocation. Boys electing the last course will not be admitted to colleges. Those who elect either of the other two courses may be admitted to the colleges of the Northern Central Association without examinations. The vocational course consists of shop mathematics, commercial English and elementary economics, in addition to shop work.

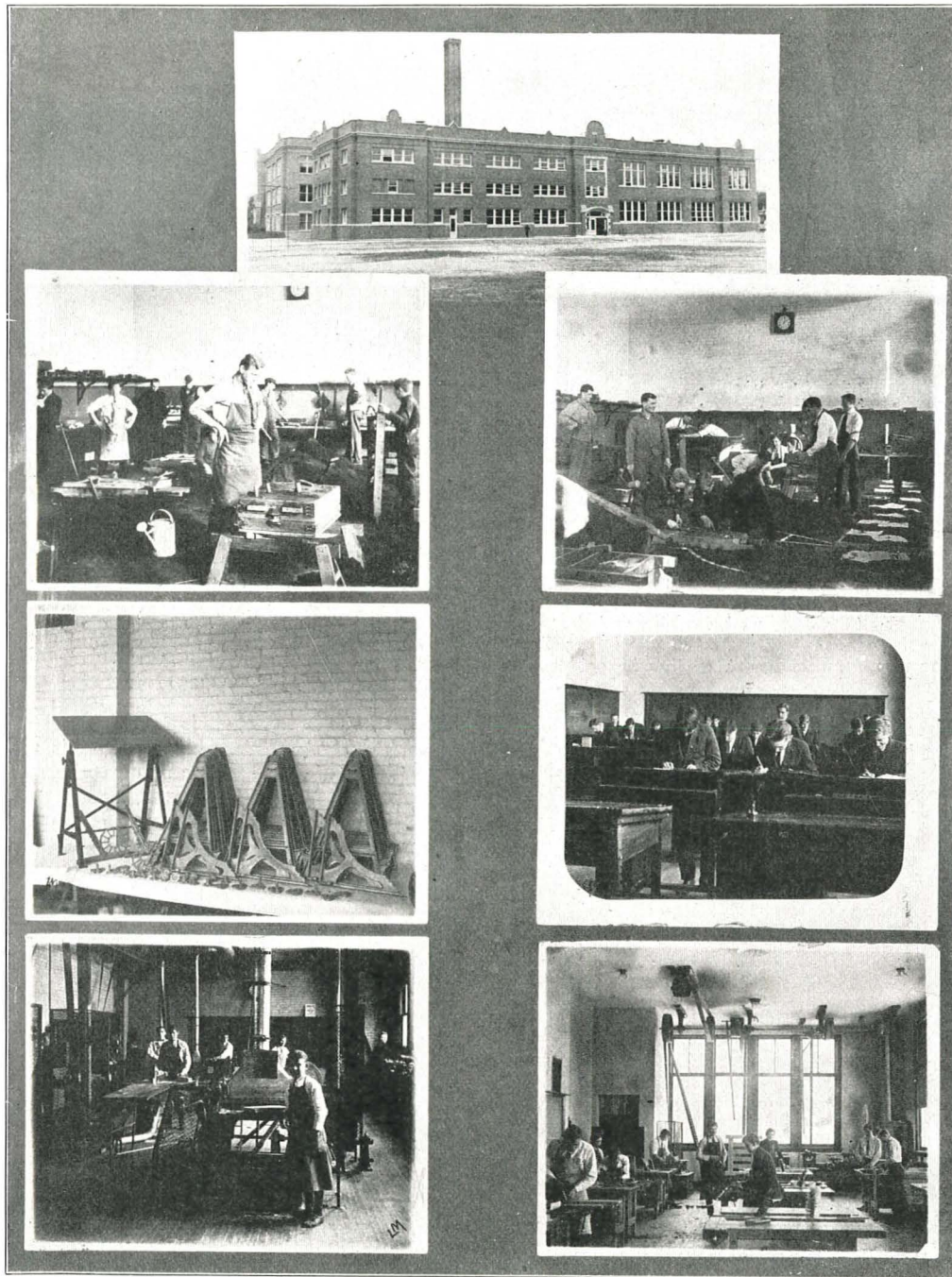
The high school work is purely elective and approximately 75 per cent of the boys choose it as they enter the school. The interest in the work is growing constantly as may be seen from the fact that sixty boys elected the work last September.

An order sheet and a time card system has been installed so that the boys will know how to make out time

cards correctly when they enter a shop. From the school's standpoint, the system is a decided success. It gives each instructor a thoro record of each boy in his own handwriting. The boys, too, are doing twice the work which was formerly expected of them. In the foundry a given number of units are allowed for certain patterns or jobs,

hour rate, and the amount earned is credited to a reserve fund which the shop can use in buying new equipment and in replacing worn out machinery, etc. A considerable sum has already been credited to the shop.

Next year's prospects look still brighter, as the city will have a good deal of work for the school. The present



Exterior and Interior Views of the Hixon Manual Training School, La Crosse, Wis.

and this plan acts similar to the piece work system in commercial shops.

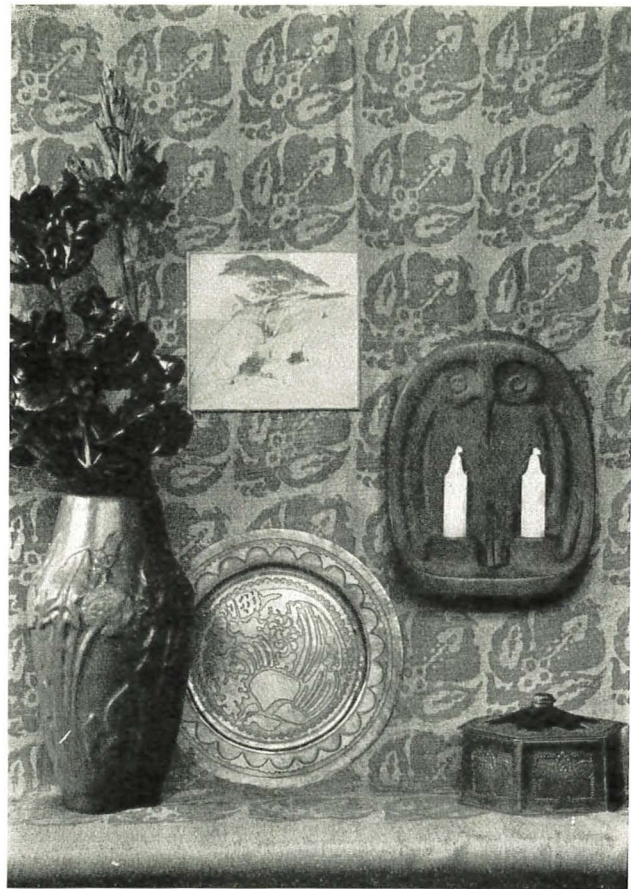
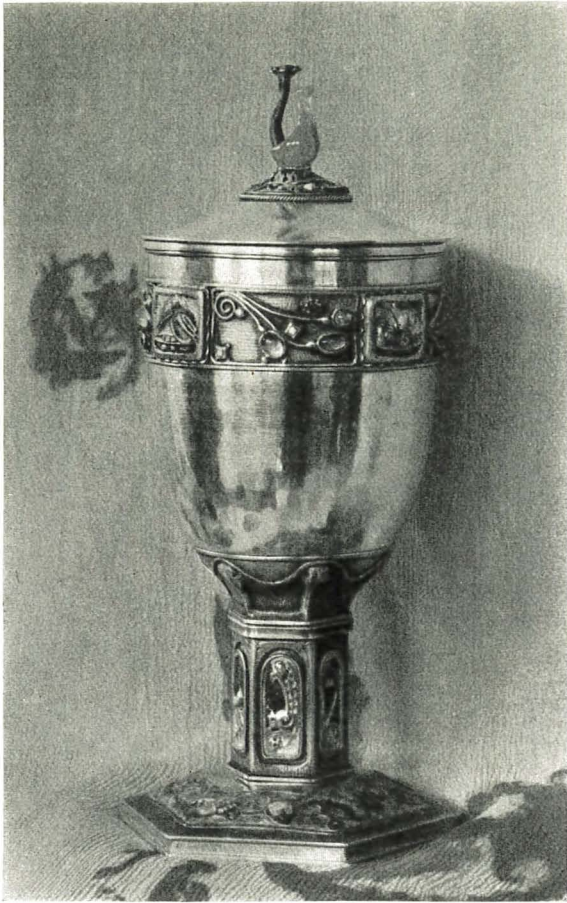
The department is doing a good deal of manufacturing for the school, such as fire escapes, drawing tables, bronze tablets, teachers' desks, and a roll-top desk for the superintendent of schools, as well as other numerous small jobs.

In manufacturing the school has strictly commercial relations with the school board. Jobs are regularly awarded to the school shop, and credit is given for the work done. The time spent by the boys is paid for at an

year has been something in the nature of an experiment, and the success of the shop in producing usable goods will lead to larger activities.

The school is on the most friendly terms with the manufacturing concerns of the community. They are encouraging the school in every way. This is due to the fact that the faculty invites the citizens to see the work done, asks for suggestions and in that way makes the people feel that it is trying to give the boys just what they should have.

A number of boys are going to work this summer,



EXHIBITS BY CALIFORNIA CRAFTSMEN AT PANAMA CALIFORNIA EXPOSITION, SAN DIEGO.

One of the notable exhibitions of the year is an exhibit of handiwork by California Craftsmen in the Southern California Building at the Panama California Exposition at San Diego. The accompanying photographs indicate the type of work shown. The silver cup, exhibited by Mr. and Mrs. Douglas Donaldsen, is an interesting study in color, the bird and flower motifs are worked out in small panels of transparent enamel in combination with opals, emeralds, moon stones, peridots and turquoise. The delicate coloring of the stones and enamel is enhanced by the gray of the silver.

The other illustration shows a pottery vase by Prof. Clark of Stanford University, decorative landscape by Bertha Heise, sconce by Olive Newcomb, enameled and jeweled box by Hilda Kaltmeyer, an etched plate by Dolly Stephens and wood block and printed textile by Margaret Wade Tuttle.

during vacation, in the commercial shops. Up to date two boys are going into a drafting shop and eight into two of the largest local foundries. The boys are urged to get practical work during vacation, which is a great value to the boy, especially if he is going to follow up shop life.

The work in the grades is made an important part of this department of the work in the school system. There are over eight hundred pupils enrolled in this department, and this overwhelming number makes it almost impossible to give as much time to the work as would be desired. The work is taken up in the fifth to eighth grades inclusive, and because of the large numbers each class comes but one period a week. The fifth and sixth grades have

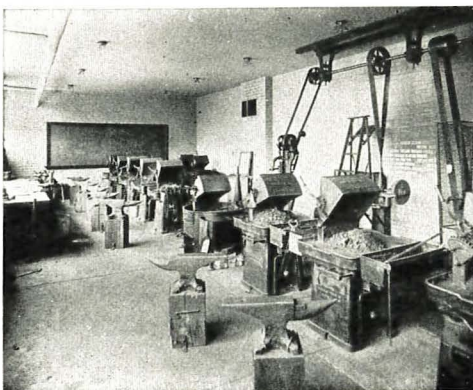
a period of one hour each, while the seventh and eighth grades have one and one-fourth hours each.

The city is divided into two districts, each district having its center. The pupils going to school in these districts attend their center for instruction. These centers are as well equipped for the work as could be desired, and are centrally located in each district. At present there is one instructor who has charge of most of the work. One of the high school instructors has charge of some of the work, otherwise the classes would be overcrowded.

The aim of the work in this department is to give the pupil an acquaintance with the use of tools and tool processes, and more stress is laid upon this phase of the work than the finished model. Sequence of steps in the use of tools plays an important part, and the aim is to make as practical a model as possible at the least cost of materials.

Work in wood is alone given in this department, altho a working drawing and a bill of material with the cost of each model is required before the work is started. This feature not only gives the pupil a better insight, but prepares him in a measure for the work in the high school course as well as in the practical work out of school.

Since the manual training has been installed in the school system, a larger per cent of boys are being tided over the disquiet period in the upper grades. The work is given to the parochial school boys as well as the others, thus giving all an equal chance to receive training along a line that appeals to most boys, and which is beneficial to all by keeping up their interest and making their school work more practical.



Forge Shop, Hixon Manual Training School.

A VOCATIONAL SCHOOL FOR BOYS.

THE BOYS' VOCATIONAL SCHOOL at Atlantic City, N. J., was organized in 1913, for the benefit of the 14-year-old boys who usually drop out of school before completing the elementary school course.

The school opened with courses in printing, carpentry, electricity and academic studies. During the first term, 51 boys were enrolled in the three trade departments from a wide range of conditions and environments. They represented the misfits of the regular elementary grades, the repeaters and those who had been working in "blind alley" occupations. Ten of these dropped out before the end of the term.

With the opening of the second term, 26 of the original class returned for advanced work and 52 were enrolled in the beginners' class. The former were grouped according to the trade selected as follows: Ten electricians, nine carpenters, seven printers. The beginners were grouped according to the judgments of the instructors and the needs of the individual students. The majority had selected the work upon their own initiative while eighteen had been guided to the vocational department.

During the present year, there are 69 students enrolled, with four male instructors in charge of the industrial and mechanical drawing classes, and one female instructor in charge of academic studies. In the first term, three hours of shopwork, $2\frac{1}{4}$ hours of academic and $\frac{3}{4}$ of an hour of drawing are given each day. For the second term, three to three and one-half hours of shopwork, and three hours of academic studies and mechanical drawing are provided.

The work is made practical and the projects are carried out from specially prepared drawings. Later it is planned to have these drawings executed by the drawing classes, made into blueprints and followed in the shops by the boys. The products of the printing and carpenter shops are also practical and much of the output has been put to direct use in the schools. The printing department is always busy on projects and jobs which form a permanent and increasing demand from the school system. The students in the electrical department have engaged in practical demonstrations and have completed creditable pieces of work in wiring and installation for the school buildings.

The aim of the vocational activities is not to turn out finished industrial workers but to give the boys an intelligent and wholesome attitude toward the different lines of industrial activity. It is hoped that after one or two years of industrial training, these boys can go out ready for a life work, equipped with a knowledge of the general principles of one or more vocations, and with a basis for a selection of some one vocation as their life work.

SCHOOL CRAFTS CLUB MEETING.

THE SCHOOL CRAFTS CLUB OF NEW YORK held its third meeting of the year at the Saunders Trade School, Yonkers, on March 13th. About fifty members and twenty visitors attended. Mr. M. W. Haynes, Principal of the Vocational School, Bayonne, N. J., presided.

Mr. J. J. Eaton, Principal of the Saunders School, opened the meeting with a paper on "Some Problems that the Saunders Trade School is Trying to Meet." "There are two types of students in the school," said Mr. Eaton, "first those over 14 years of age, who come from the sixth or seventh year grades, and secondly graduates of the elementary schools. These two classes of pupils have necessitated a double organization within the school. Those of the first class are known as Juniors, and upon completion of the course are given an elementary diploma, which grants them admission to the high school and also a State Trade Certificate. The boys of the second group are known as Seniors and upon completion of the course are given a State Certificate in addition to a Saunders School Diploma. From the present influx of elementary

school graduates, the school is likely to be organized as a technical high school."

Mr. Eaton then described in detail the organization and courses of study and products of the school.

Mr. Frank I. Frishberg, in charge of the pre-vocational work in Public School No. 62, Manhattan, New York City, was the second speaker of the afternoon. His topic was "Pre-vocational Instruction of Boys." Mr. Frishberg described the work being done in his school as follows:

"The classes in pre-vocational instruction were organized in April, 1914, and were the first so organized in New York City. The objects of the work are: First, to help pupils in school until they can graduate, to find something to hold the interest of the boy who is left back; second, to give the boys and girls an opportunity to find the kind of work for which they are adapted; third, to give the pupil upon graduation an idea as to the kind of higher education he wants to get. Fourth, to guide boys and girls who have gone to work, to find useful and healthful occupation in preference to blind alley jobs. Fifth, the school does not aim to turn out apprentices or mechanics in any sense of the term.

"The pupils are organized into three groups as follows: Industrial, Commercial and Academic groups. The work is so organized that the pupil receives about fifteen hours' work per week in his shop work and as much in grade or academic subjects.

"The Industrial group is sub-divided into Woodwork—Machinework practice, Electrical wiring and sheet metal work. The pupil at the beginning of the year enters one of these groups. If at the end of two weeks he has proven unfitted for the particular work he is doing, he is transferred into the Academic group where he puts in all his time until the end of the ninth week, which is the end of the first term. The boy then goes in to the second division of the Industrial group for another nine weeks and on until he has completed the four groups. If a boy has selected the Commercial group, he is tried out in the various branches of that subject. For the girls in the Industrial group there is millinery, dressmaking, etc.

"At present the work in the shops consists mainly of making things that can be used in the city schools, such as head-trays, benches, tin cans, dust pans, pots, etc., etc."

Mr. Vroom, the last speaker of the afternoon read a paper on "What does Manual Training stand for as a Part of General Education?" Mr. Vroom traced the history and development of the Manual Training movement and spoke of its first psychological justification, i. e., faculty psychology and the need of Motor Training.

Mr. Vroom then described the development of the work so as to give an appreciation of industry and to serve as an introduction to vocational work. Finally, Mr. Vroom justified Manual Training for its value as a subject, training in which, developed the powers of consecutive and constructive thought.

The Club has found these visits very profitable. The members of the Club come from a district having a population of nearly 10,000,000 people. The problem of teaching Manual Training in a district of this size, representing as it does all kinds of centers of manufacturing, transportation and residence, has to be attacked from many angles to get a broader outlook upon the work and its relation to education and industry. The School Crafts Club of New York would be glad to forward copies of its program to any Association of Manual Training teachers, and will be glad to receive the program of any Clubs which care to send them to any of the officers or to the undersigned. The officers for this year are: Pres. Morris Greenberg, Teacher of Drawing, Commercial High School, Brooklyn, N. Y.; V.-Pres. Chas. W. Ledley, Teacher of Woodworking, Stuyvesant High School, New York, N. Y.; Secy. Chas. R. Bostwick, Director of Manual Training, Plainfield, N. J.; Treas. Ezra Putnoi, Teacher Shopwork, Public School No. 24, Manhattan, New York City.

William H. Carter.

NEW BOOKS AND PAMPHLETS

The Basketry Book.

(Twelve Lessons in Reed Weaving.) By Mary Miles Blanchard. 106 pages. Charles Scribner's Sons, New York.

It would be difficult to conceive a more explicit description and illustration of the methods of reed basket weaving than this book presents. The limited to reed weaving, the book describes in detail the materials for, and the methods of making a great variety of baskets.

Directions for making fundamental weaves; Work-baskets; Variations of Flower Baskets by different weaves and measurements; Candy Baskets with and without lids; Indian Centres; Scrap-Baskets and oval baskets are given and illustrated so clearly that any person may get results from the use of this book.

Other chapters are devoted to Materials, Tools, Preparations, Tables of Weaves, Coils, Borders, and scale of measurements for models given in the twelve lessons.

It is realized by one who notes the expert workmanship of this book that the author deserves the title "Master Craftsman of Reed Basketry," given to her on the title page.

Nutrition and Diet.

Emma Conley. 208 pages. American Book Co., New York, Cincinnati, and Chicago.

This volume is intended for the high school and, in the words of the author, "is designed to supplement the practical and experimental work and unify the whole so that the student will know proper foods and the relation of food to health, strength, and efficiency."

The materials of the book are well selected and intelligently handled. Much of the work is based upon the author's experiments with her own classes. Such a treatise undoubtedly merits a large use in the high schools.

Monograms and Ciphers.

Designed and drawn by A. A. Turbayne. 135 full-page plates, showing 900 original designs. \$1.50. The Prang Company.

The author has been a designer of monograms, ciphers, and trade-marks for many years, and this book presents at a suitable scale for study and use, 900 designs covering a wide range of letter combinations. The designs are alphabetically arranged so that any combination can be readily found. This book should be valuable to teachers and students of manual-arts work on which monograms can be applied, and it should be suggestive of original design. In the introduction is given directions and suggestions for the study of letter combinations.

Vocations for the Trained Woman.

By Eleanor Martin and Margaret Post, and Committee on Economic Efficiency of College Women, Boston Branch, Association of Collegiate Alumnae. Prepared under the direction of Susan M. Kingsbury. 175 pages. Longmans, Green & Company, New York.

The report of these investigations constitutes a practical and useful book of reference on the subject of women in the vocations of agriculture, social service, secretarial service, and in the real estate business.

The report on agriculture is based on reports of investments, expenses, returns, profits and other data reported by market gardeners, fruit and flower growers, nursery-men, poultry raisers, bee keepers and dairy operators, in Massachusetts. The report on social service is based on a survey of social work in New England cities and towns; the report on real estate business being based on a study in Boston and suburbs.

The report on secretarial work gives charts and other data showing salaries received by women, the education required for advantageous entrance to the work, and the

relation between education and remuneration. The statistical information is given in simple and usable form.

Mental and Physical Measurements of Working Children.

By Helen Thompson Wooley and Charlotte Rust Fischer. 247 pages, \$2.50, plus postage. Psychological Review Publishing Company, Princeton, N. J.

This is the first report of the five-year study of working children, begun in Cincinnati, in 1910, under the auspices of the board of education. It presents a set of mental and physical tests made upon 750 children 14 years of age who were just leaving school to begin work, and 680 of the same children a year later.

The method for giving each test and for evaluating the results is very carefully and completely stated. The results are given for each sex in every measurement and in tables and graphs which show comparisons of the school grades, age and sex of public and parochial school children. A very careful application of the results to the problem of vocational education is made in the closing chapter.

The Gary System.

Report of the Committee appointed by the Syracuse Board of Education to investigate the school system of Gary, Ind. Published by the Board of Education, Syracuse, N. Y.

The Committee has evidently found some commendable features in the Gary schools and also many things which are criticised.

The Social Aspects of Printing.

A twenty-page booklet by Leonard W. Wahlstrom and Elsa Miller of the Francis W. Parker School, Chicago, describing in an interesting manner the work done in the printshop of this unique institution.

Empire State Vocational Conference Bulletin is the title of a publication to be issued periodically by a group of supervisors of vocational education, headed by Mr. Lewis A. Wilson of the State Education Department. The first issue contains a summary of the Elmira Conference of the Southern Tier (N. Y.) Vocational Teachers' Association. It includes suggestive outlines for vocational school English, arithmetic, geography, history and civics. Future issues of the Bulletin are to contain similar summaries of the sectional conferences of vocational teachers so that all teachers in the state may share in the discussions. The bulletin is set in type and printed by the boys of the Elm Vocational School, Buffalo, and compares well with a good commercial job.

Circular of Information. A complete circular of information concerning the training classes in Vocational Schools has been issued by the Massachusetts State Board of Education. It may be had by addressing the board at 509 Ford Bldg., Boston, Mass., Mr. Chas. R. Allen, Agent.

Handicraft Club-Woodwork. This is Part Three, of the splendid series of pamphlets on woodwork for rural schools, prepared by Professors O. H. Johnson and R. K. Farrar, of the Iowa State College of Agriculture and Mechanic Arts, under the direction of Mr. E. C. Bishop, of the United States Department of Agriculture. The problems include a saw-horse, emergency case, barn medicine case, trunk chest, chicken brooder, etc.

Mechanics of the Sewing Machine. Monograph 5, Joint Committee on Physics, National Education Association. One of a valuable series of monographs and charts prepared by co-operation of a committee of teachers and businessmen. Copies may be had, gratis, by addressing J. A. Randall, Chairman, Pratt Institute, Brooklyn, N. Y.

NOW, ARE THERE ANY QUESTIONS?

Readers are urged to ask questions concerning the Industrial Arts. The editors will reply to those questions which they feel that they can answer, and to other questions, they will obtain replies from persons who can answer them authoritatively.

Summer Schools.

Vermont. Q:—May I ask you to tell me where I can spend the coming summer to the best advantage? I am a teacher of woodworking but am not properly prepared for the work.

A:—The following institutions conduct summer sessions in which one may receive excellent instruction in woodworking and the methods of teaching it: Stout Training School, Menomonie, Wis.; Bradley Polytechnic Institute, Peoria, Ill.; Columbia University (Teachers College), New York City; University of Wisconsin, Madison; Peabody College for Teachers, Nashville, Tenn.

Etching Copper and Brass.

Lamoni, Iowa. Q:—What is the black paint put on copper and brass for etching purposes? Where may I procure it? About what is the cost?

A:—The best resistant for etching on copper and brass is Asphaltum Varnish. It may be bought from The National Steel & Copper Plate Co., 358 Dearborn St., Chicago. It costs about as follows: 65c a gallon, 25c a quart, 15c a pint.

Works on Sewing and Drafting.

Jackson, Miss. Q:—Will you kindly give the names of some good books on Sewing, Millinery, Drafting, etc.?

A:—The Macmillan Co. has two good books dealing with these subjects. They are, "Sewing Course," by M. Woolman, and "Shelter and Clothing," by Kinne and Cooley.

Illinois Course.

Newport, Tenn. Q:—Where can I secure a copy of the Course of Study put out by the Illinois Manual Arts Association?

A:—These are out of print and cannot be procured.

Two-Way Hinges.

Kalispell, Mont. Q:—I would like to know where I could obtain a two-way hinge for a three-panel screen.—R. C. W.

A:—Orr & Lockett Hardware Company, Chicago, can supply you. Your local hardware dealer can easily obtain the hinge if he will only look thru his catalogs.

Art Leather Work.

Terre Haute, Ind. Q:—Will you please refer me to some good book on leather work?

A:—*Leather Work*, by Adelaide Mickel. Price, 75 cents. Manual Arts Press, Peoria, Ill.

Trophies.

Illinois. Q:—I wish to have a shield made as a trophy for a literary society. This is to be made of wood with letters carved on it, or a wooden shield with an engraved brass plate on it. Can you tell me where I can have such a shield made?—C. D. C.

A:—The following concerns can furnish you with a suitable shield: Sam'l Mortenson & Co., 833 Jackson Blvd., Chicago; Chicago Flag & Decorating Co., 1346 Wabash Ave., Chicago; J. W. Hanington & Co., 161 Grand Ave., New York.

History of Costume Design.

Jenkintown, Pa. Q. 1:—Is there a chart made which could be used in teaching "History of Costumes" to a sewing class (I mean one on the order of a primary reading chart) which could be used to illustrate the lecture? 2. Can you give me the name of a firm which supplies stereoscope views or even postal cards illustrating costumes? 3. Are stereopticon slides made for this purpose? If so, where can they be bought? 4. Will you kindly give me the names of one or two good books on "History of Costumes?"—A. S. Z.

A:—1, 2, 3. There are none.

4. *Zur Geschichte der Costume*. Price, \$7.70, retail. G. E. Stechert & Co., New York.

Trachten der Völker. By Kretschmar and Rohrbach. Price, \$15, retail. G. E. Stechert & Co., New York.

Two Centuries of Costume in America. By A. H. Earle. Price, \$2.50. Macmillan Co., New York.

Industrial Drawing for Girls. By E. C. Hammond. Price, \$1.50. Redfield Bros., New York.

Furniture Design.

East Auburn, Cal. Q:—Where can I get the Stickley Designs? Where can I get a good book on the Furniture Design of the different periods as Chippendale, Seaton, etc.?—F. A. F.

A:—Gustave Stickley, 38th Street, near Fifth Ave., New York City.

One of the best known works is "Period Furnishings," published by Clifford & Lawton, 1 E. 28th St., New York, N. Y. Price, \$5. Other good books are:

How to Know Period Furniture. By W. L. Kimerly. Published by the Manual Arts Press, Peoria, Ill. Price, \$1.50.

The Book of Decorative Furniture. By Edwin Foley. Two Vols., \$15. American Architect, New York, N. Y.

Examples of Old Furniture, English and Foreign. By Alfred E. Chancellor. Price, \$10. American Architect, New York.

Furniture Designs of Thomas Chippendale. Price, \$6. American Architect, New York.

Furniture Designs of Thomas Chippendale, George Hepplewhite and George Sheraton. Price \$15.00. American Architect, New York.

SELLING FARM PRODUCE IN HOBOKEN.

A CARLOAD of farm produce was received in Hoboken, N. J., on March 16 and sold at cost to needy families of the city by the students of the Vocational School for Girls. The purpose of the sale was to help families in need of assistance, especially such as have been brought into distress by the European War. A second purpose of the experiment was to give practical business experience to the pupils of the schools.

The funds for the purchase of the produce were advanced by three citizens of Hoboken, Mr. Richard Stevens, Mrs. H. Otto Wittpenn and Mr. E. G. Traua, Director of Vocational Education of the Hoboken schools.

The first carload of the produce included 500 bushels of potatoes, 15 bushels of apples, 15 bushels of beets, 15 bushels of turnips and two tons of cabbage. All of this produce was sold in the basement of the school building by a sales force consisting of girls. The sale opened at 8:30 A. M. on March 17th and continued until 4 P. M. To protect retail merchants of the city, tickets were issued to the clergy and charitable organizations who were asked to investigate and recommend only worthy cases. Each ticket was countersigned by an investigator and no one was permitted to buy without a ticket.

NEW YORK SEEKS ART TEACHERS.

DR. JAMES P. HANEY, Director of Art in the New York City High Schools has announced an examination for licenses as teachers of drawing of high schools to be held May 10 and 11. Dr. Haney will be glad to send circulars giving full descriptions of the examinations and other information concerning the teaching of art in the New York high schools to any one who may be interested and who will address him at the Hall of the Board of Education, 500 Park Ave., New York City.